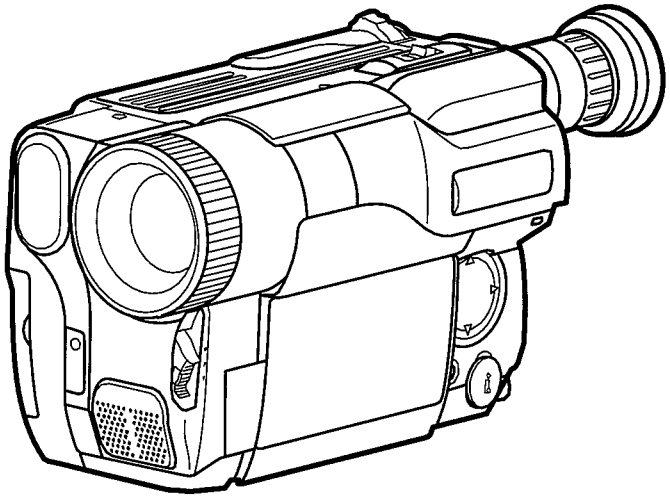
HITACHI

SERVICE MANUAL



TK | No.7004E

VM-D965LE/D965LE(AU)
VM-D865LE/D865LE(AU)
VM-D865LE(UK)

AC Adapter
VM-ACE5E/ACE5E(AU)/ACE5E(UK)

UH MECHANISM

■ **When Servicing the Mechanism:**
This camera/recorder uses a UH mechanism. When servicing the UH mechanism, refer to the following service manuals:

Item	Manuals to be referred to
Disassembly	UH Mechanism (No. 6811E)
Mechanical Adjustment	UH Mechanism Supplement (No. 6811E-1)
Maintenance/ Inspection Procedure	UH mechanism (No. 6811E)
Exploded View	Chapter 4 in this manual

Hi8

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

DIGITAL 8 VIDEO CAMERA/RECORDER

September 2000 Digital Media Products Division,Tokai

CAUTION

Lithium battery; danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacuturer's instructions.
When replacing the lithium battery it is important to use the same type and connect it correctly.

WARNING:
- Lithium batteries contain dangerous chemicals.
- Handle and dispose of with great care.
- Do not throw in a fire.
- Do not short circuit it.
- For disposal place in a plastic bag and put in waste bin.

CAUTION (COLOR LCD)

LCD display; the liquid crystal display (LCD) panel is mode by highly precise technology.
More than 99.99% of its picture elements (pixels) are effective, but some (less than 0.01%) may appear as colored bright dots. This mode not indicate a fault as the LCD panel stretches the limits of current technology.

CAUTION (CRT EVF)

Be careful of the section painted in white on the electronic viewfinder circuit board as it generates a high voltage.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts have special safety-related characteristics. These are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for a higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual. Electrical components having such features are identified by marking with a ⚠ on the schematics and the parts list in this Service Manual. The use of a substitute replacement component which does not have the same safety characteristics as the HITACHI recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards. Product safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current HITACHI Service Manual. A subscription to, or additional copies for, HITACHI Service Manual may be obtained at a nominal charge from HITACHI SALES CORPORATION.

X-RAY RADIATION

The primary source of X-ray radiation in this viewfinder is the picture tube. The tube used in this viewfinder is specially constructed to limit X-ray radiation emission. For continued X-ray radiation protection, the replacement tube must be same type as the original, Hitachi approved one.

How to discriminate the "TYPE" identifications in the manual

The parts and circuits are identified by "TYPE" in this manual to discriminate the differences between models. The TYPE numbers are the same as the model numbers. The table below shows how to read the type identifications.

TYPE identification	Model name
TYPE 965	VM-D965LE/D965LE(AU)
TYPE 865	VM-D865LE/D865LE(AU)/D865LE(UK)

ENGLISH

Notes When Using Service Manual

The following shows the contents to be noted when using service manual:

1. Value units used in parts list

Certain symbols are indicated below for value units of resistors, capacitors and coils in parts list. When you read them note the following regular indications:

Parts	Indication in list	Regular indication
Resistor	KOHM	kΩ
Capacitor	UF	μF
	PF	pF
Coil	UH	μH
	MH	mH

2. Values in schematic diagrams

The values, dielectric strength (power capacitance) and tolerances of the resistors (excluding variable resistors) and capacitors are indicated in the schematic diagrams using abbreviations.

[Resistors]

Item	Indication
Value	No indication ····· Ω K ····· kΩ M ····· MΩ
Tolerance	No indication ····· ±5% (All tolerances other than ±5% are indicated in schematic diagrams)
Power capacitance	No indication ····· 1/8W (1/16W for leadless resistors without indication) All capacitances other than the above are indicated in schematic diagrams.

[Capacitors]

Item	Indication
Value	No indication ····· μF P ····· pF
Dielectric strength	No indication ····· 50V (All dielectric strengths other than 50V are indicated in schematic diagrams)

[Coils]

Item	Indication
Value	μ ····· μH m ····· mH

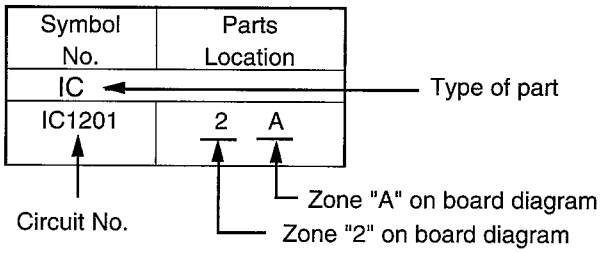
3. Identifications of sides A/B in circuit board diagrams

1) Board having a pattern on one side and parts on both sides.
   Side A: Shows discrete parts, viewed from the pattern side.
   Side B: Shows leadless parts, viewed from the pattern side.
2) Board having patterns on both sides and parts on both sides.
   Side A: Shows parts and patterns which can be seen when the case is opened.
   Side B: Shows parts and the pattern on the back of side A.

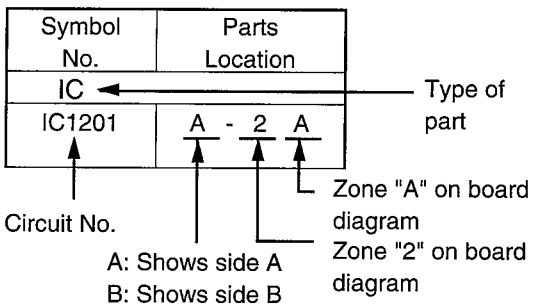
4. Table for indexing locations of parts

This table shows locations of each part on circuit board diagrams. The locations are indicated using the guide scales on the external lines of diagrams.

1) One diagram indicated for each board



2) Two diagrams indicated for each board



Before Servicing (Before Initializing EEPROM)

Caution:

Before servicing this camera/recorder (before initializing EEPROM), check the IEEE1394 ID No. by the following procedure:

Be sure to input the IEEE1394 ID No. after initializing the EEPROM.

1. IEEE1394 ID No. Check Method

(1) Connect the camera/recorder, personal computer, power supply, etc. in the same way as for adjustment, referring to Fig. 1-1 in CHAPTER 3.
(2) Start the MAP (manual adjustment program for service), referring to "6. HOW TO START THE MAP" in CHAPTER 3.
(3) Refer to display 1.
(4) Press **A** key.
(5) Refer to display 2.
Note: For "DATA INITIALIZE", see "7.1 Data Maintenance" in CHAPTER 3.
(6) Press **2** key.
(7) Refer to display 3.
(8) Press **1** key.
(9) Refer to display 4. ID No. will appear: Make a note of it.
(10) Press any key.

IMPORTANT:

If the IEEE1394 ID No. cannot be confirmed by the above procedure because of some defect in EEPROM, etc., a new ID No. will be necessary. Obtain the new ID No., referring to "3. Method for Obtaining New ID No.", and input it, referring to "2.2 Entering new ID No.".

2. IEEE1394 ID No. Input Method

IMPORTANT:

Be sure to perform this task after initializing the EEPROM.

If ID No. is to be input after EEPROM (or MAIN circuit board) is replaced and new EEPROM is initialized, use the ID No. that has already been checked. (It is not necessary to obtain a new ID No.)

Before Starting input:

(1) Connect the camera/recorder, personal computer, power supply, etc. in the same way as for adjustment, referring to Fig. 1-1 in CHAPTER 3.
(2) Start the MAP (manual adjustment program for service), referring to "6. HOW TO START THE MAP" in CHAPTER 3.
(3) Refer to display 1.
(4) Press **A** key.
(5) Refer to display 2.
Note: For "DATA INITIALIZE", see "7.1 Data Maintenance" in CHAPTER 3.

Display & Figs

Display 1
MAIN MENU

```
**********************************************
MANUAL ADJUSTMENT PROGRAM
**********************************************
  [A]    DATA MAINTENANCE
  [B]    ADJUSTMENT
  [C]    AUTO FOCUS
  [D]    VCR ADJUSTMENT
  [E]    STABILIZER
  [F]    SPOT NOISE
  [G]    LCD
  [H]    COLOR EVF
  [ESC]  END
   Please select [A] - [H] or [ESC]
```

Display 2
DATA MINTENANCE MENU

```
**********************************************
DATA MAINTENANCE
**********************************************
  [1]    DATA INITIALIZE
  [2]    IEEE1394 MAINTENANCE
  [ESC]  RETURN TO MAIN MENU
   Please select [1] - [2] or [ESC]
```

Display 3
IEEE1394 ID MINTENANCE MENU

```
**********************************************
IEEE1394 ID MAINTENANCE
**********************************************
  [1]    LOAD CURRENT CHIP_ID
  [2]    REWRITE CHIP_ID
  [3]    WRITE CHIP_ID
  [ESC]  RETURN TO MAIN MENU
   Please select [1] - [2] or [ESC]
```

Display 4

```
<< CURRENT CHIP_ID
                DATA LOADING>>
  CHIP_ID H =   00
  CHIP_ID L =   00 00 00 00
        PRESS ANY KEY
```

2.1 Entering checked ID No.

The following is the procedure for entering the ID No. checked in "1. IEEE1394 ID No. Check Method":
Normally, use this procedure.

(1) Refer to display 2.
(2) Press **2** key.
(3) Refer to display 3.
(4) Press **2** key.
(5) Refer to display 5.
(6) Enter the 2-digit ID No. for the CHIP ID H item.
(7) Press the [Enter] key.
(8) Enter the 8-digit ID No. for the CHIP ID L item: Input 2 digits at a time starting from the left, and press the [Enter] key for each 2-digit input.
(9) Press the [Enter] key to restore display 3.
(10) Perform the procedure in "1. IEEE1394 ID No. Check Method" to make sure that the ID No. has been entered correctly.

2.2 Entering a new ID No.

Perform this section only when the ID No. cannot be checked by the procedure in "IEEE1394 ID No. Check Method" because of a defect in EEPROM. Normally, refer to "2.1 Entering checked ID No.".
Refer to "3. Method for Obtaining New ID No." for how to obtain new ID No. to be entered by the following procedure:

(1) Refer to display 3.
(2) Press **3** key.
(3) Refer to display 6.
(4) Press **Y** key.
(5) Refer to display 7.
(6) Enter the new 2-digit ID No. for the CHIP ID H item.
(7) Press the [Enter] key.
(8) Enter the new 8-digit ID No. for the CHIP ID L item: Input 2 digits at a time starting the left, and press the [Enter] key for each 2-digit input.
(9) Refer to display 8.
(10) Press any key.
(11) Perform the procedure in "1. IEEE1394 ID No. Check Method" to make sure that the new ID No. has been entered correctly.

3. Method for Obtaining New ID No.

If the ID No. cannot be confirmed by the procedure in "1. IEEE1394 ID No. Check Method", a new ID No. will be necessary. Obtain the new ID No. using the following procedure:

The details on the method for obtaining the new ID No. will be given later.

Caution:
If the ID No. can be confirmed by the procedure in "1. IEEE1394 ID No. Check Method", be sure not to attempt to obtain a new ID No.

Display & Figs

Display 3
IEEE1394 ID MINTENANCE MENU

```
**********************************************
      IEEE1394 ID MAINTENANCE
**********************************************
  [1]    LOAD CURRENT CHIP_ID
  [2]    REWRITE CHIP_ID
  [3]    WRITE CHIP_ID
  [ESC]  RETURN TO MAIN MENU
    Please select [1] - [2] or [ESC]
```

Display 5

```
<< CURRENT CHIP_ID DATA >>
CHIP_ID H =   00
CHIP_ID L =   00 00 00 00
  << INPUT CHIP_ID DATA >>
      CHIP_ID_H---->
```

Display 6

```
    << NEW CHIP_ID DATA >>
CHIP_ID H =   00
CHIP_ID L =   00 00 00 00
     << DATA WRITING >>
START TO SEND DATA. (Y/N)
```

Display 7

```
<< INPUT NEW CHIP_ID DATA >>
      CHIP_ID_H----> 00
```

Display 8

```
    << NEW CHIP_ID DATA >>
CHIP_ID H =   00
CHIP_ID L =   00 00 00 00
     << DATA WRITING >>
  FINISHED WTITING DATA
     PRESS ANY KEY
```

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CHAPTER 8 AC ADAPTER

VM-ACE5E 8-2

CHAPTER 1 GENERAL INFORMATION

SPECIFICATIONS

General

Power requirements	7.2 V DC
Power consumption	5.5 W (when recording/LCD monitor OFF) 6.2 W (when recording/LCD monitor ON)
Operating temperature	0°C to 40°C
Operating humidity	< 80%
Storage temperature	-20°C to 60°C
Dimensions	VM-D965LE/D965LE(AU): 111.5 (W) × 111.5 (H) × 196 (D) mm VM-D865LE/D865LE(AU)/D865LE(UK): 111.5 (W) × 111.5 (H) × 200 (D) mm
Weight	Approx. 855 g

Video Recorder Section

Format	Digital 8
Record/playback	Two video record/playback heads
Video signal	PAL colour & CCIR monochrome signals 625 line
Tape speed	SP: 28.7 mm/s LP: 19.2 mm/s
Video output	1.0 Vp-p, 75 ohm
Audio output	-8 dBs, less than 1k ohm
Fast forward/rewind time	Approx. 6 minutes with P5-90 cassette

Camera Section

Scanning	625 lines/50 fields/25 frames
Required minimum illumination	0.5 lx
Camera device	1/4" C.C.D.
Lens	F1.6 to 3.8 (4 to 88 mm) 22:1 power zoom lens with auto focus and auto iris functions
Lens diameter	46 mm

COMPARISON OF FEATURES

Note: Destinations normally added at the end of model names, (AU), (UK), etc. are omitted in this table.

	ITEM	VM-D965LE	VM-D865LE	VM-H768LE/H765LE
GENERAL	Power Requirements	7.2 V DC		
	Power Consumption (while recording with the AF turned on)	5.5 W (LCD screen OFF) 6.2 W (LCD screen ON)		3.6 W (LCD screen OFF) 4.1 W (LCD screen ON)
	Dimensions (W x H x D)	111.5 x 111.5 x 196 mm	111.5 x 111.5 x 200 mm	111.5 x 111.5 x 202 mm
	Weight	Approx. 855 g		Approx. 836 g
	Operating Temperature	0 to 40 °C		
	Storage Temperature	-20 to 60 °C		
VIDEO	Format	Digital 8		8 mm (Hi-8)
	Record/Playback System	Two video record/playback heads		
	Video Signal	PAL colour & CCIR mono-chrome signal 625 lins		
	Audio Signal	PCM Digital Stereo		AFM Stereo
	Internal Microphone	Stereo Type		
	Recording/Playback Tape Speed	SP: 28.7 mm/s LP: 19.2 mm/s (8 mm/Hi-8 Playback: 20.05 mm/s)		SP: 20.05 mm/s
	F.F/Rew Time	Approx. 6 minutes (with a P5-90 cassette)		
	Head Wheel	40 mm		
	Basic Chassis Type	UH (For Digital 8)		UH
CAMERA & LENS	Scanning	625 lines/50 fields/25 frame		
	Required Minimum Illumination	0.5 lx		*VM-H768LE:* 0.3 lx *VM-H765LE:* 0.5 lx
	Camera Device	1/4 inch CCD 570,000 pixels (360,000 effective pixels)		*VM-H768LE:* 1/4 inch CCD 320,000 pixels (290,000 effective pixels) *VM-H765LE:* 1/4 inch CCD 570,000 pixels (360,000 effective pixels)
	Lens Diameter	46 mm		
	Zoom Ratio	22 : 1 (4.0 - 88.0 mm)		
	Aperture	F1.6 - 3.8		
	Autofocus System	Video AF System		
	Zoom Speed	Adjustment speed		
FEATURES	Electronic Viewfinder (EVF)	0.44 inch color LCD	0.4 inch monochrome CRT	
	Monitor	2.5 inch TFT color LCD		
	Electronic Image Stabilizer (EIS)	Yes (Picture element system)		
	Electrical Zoom Function	x 500		
	INST. ZOOM Function	No		
	Program AE	Yes		
	Selective Program AE	Yes (Auto/Sports/Portrait/ Spotlight/Gain up)		
	While Balance Lock	Yes		
	Photo Recording System	Yes	No	
	Video Input Terminal	No		
	External Microphone Terminal	Yes (Stereo Type)		
	S-Connector Output	Yes		
	DV Terminal	Yes [IEEE1394 AV/C] (Output only)		----------

	ITEM	VM-D965LE	VM-D865LE	VM-H768LE/H765LE
FEATURES	Recording of External Analog Input	No		----------
	Analog in - Digital out	No		----------
	AV Dubbing	Yes (Using the remote control)		
	Multi Playback (PAL Conversion)	No		Yes
	Digital Effect & Fade	Yes		
	Date Search	Yes		
	TBC Function	Yes (Hi8/8mm playback only)		Yes
	Tape Analyzer ATRS	No		Yes
	TAPE+ Function	Yes (Playback only)		Yes
	Hi-8/Normal 8 Playback	Yes (SP only, Monaural Audio)		----------
	Internal DC Light	Yes	No	Yes
	Internal Battery Charge	Yes		
ACCESSORY	AC Adapter	VM-ACE5E		
	Battery Pack	VM-BPL13		
	Remote Controller	VM-RME611A		

COMPARISON OF MAIN CONTROL ICs

Note: Destinations normally added at the end of model names, (AU), (UK), etc. are omitted in this table.

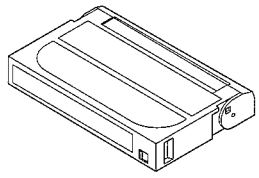
	ITEM	VM-D965LE/D865LE		VM-H768LE/H765LE	
SENSOR	CCD Sensor	ICX211AK-L	(IC1001)	ICX207AK-K [VM-H768LE] ICX211AK-L [VM-H765LE]	(IC1001) (IC1001)
	V-Move	CG-L33AB0	(IC1401)	ENC-03JA-03	(IC1401)
	H-Move	CG-L33AB2	(IC1402)	ENC-03JB-03	(IC1402)
	Gyro Amp	NJU7018M	(IC1403)		
	Sensor Drive	µPD16510GR	(IC1002)	µPD16510GR	(IC0203)
VIDEO/AUDIO SIGNAL PROCESS	Video DSP	MB87L1551PMT2	(IC0201)		
	CDS/AGC & A/D Converter	HD49323AF	(IC0202)		
	Buffer Amp (BUF)	74LCX541MTCX	(IC0203)	Not provided	
	Inverter (INV)	TC7SHU04FUL	(IC0210)		
	Oscillator (OSC)	TC7WH157FK	(IC0211)		
	FM AGC	HA118189MPER	(IC0101)	----------	
	Video Head Amp	On the DV circuit board	(IC2101)	HA118189MPER	(IC0101)
	RGB Amp	UPC5020GR-125-8J	(IC0350)		
	Video I/O [Video Amp]	On the DV circuit board	(IC2102)	µPC5020GS129	(IC0301)
	DV Process	On the DV circuit board	(IC2103)	Not provided	
	8mm Audio Process [Audio Process]	LA7458W	(IC0401)	HA118193F	(IC0401)
	DV Audio Process	LA74202W	(IC1403)	Not provided	
	Input Sw	NJM2533V	(IC0402L/IC0402R)		
	Audio A/D & D/A Conv.	On the DV circuit board	(IC2107)		

	ITEM	VM-D965LE/D865LE		VM-H768LE/H765LE	
CAMERA/SYSTEM CONTROL & POWER	Camera µP	HD6432237M13TE	(IC1104)	HD6432237M08TE	(IC1104)
	EEPROM	X25330S81-2.5T3	(IC1105)	AT25160N	(IC1105)
	D/A Conv.	MB88347PFV	(IC1111)		
	F-Det. /Iris Driver	µPC5023GS-147GJG	(IC1201)		
	Zoom/Focus Motor Drive	µPD16833AG3	(IC1301)		
	8mm System Control µP (System Control µP)	CXP87360-E6D	(IC0901)	CXP87360-132R	(IC0901)
	Back-up Det.	NJU7285BV	(IC0902)		
	Character Gen.	µPD6461GS-950-E1	(IC0904)	µPD6461GS-947-E1	(IC0904)
	IR Receiver	GP1U101X	(IC0701)		
	DV System Control	On the DV circuit board	(IC1901)	Not provided	
	S-RAM	On the DV circuit board	(IC1902)		
	Address Decorder	On the DV circuit board	(IC1903)		
	Flash Memory	On the DV circuit board	(IC1904)		
	PWM	BA9736KV	(IC0551)		
	5V Reg.	PQ20WZ51	(IC0553)		
	2.5V Reg.	TK11125S	(IC0554)	Not provided	
	CHG. Current Cont.	MM6564XFBE	(IC0001)		
SERVO	Cylinder Motor Drive	LB1950V-TRM	(IC0631)		
	FG Amp	LMV751M5X	(IC0632)	Not provided	
	Capstan Motor Drive	LB1991V-TRM	(IC0651)		
	Loading Motor Drive	BA6417F	(IC0671)		
EVF & LCD	EVF Video Process	VM-D965LA: CXA3017R VM-D865LA: In the EVF unit	(IC3801)	In the EVF unit	
	Buffer Amp (BUF)	SN74AHC126PW	(IC3803)	Not provided	
	LCD SWR	TL5001CD	(IC5501)		

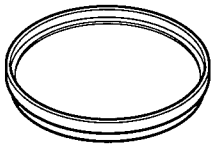
Memo

JIGS AND TAPES FOR SERVICE

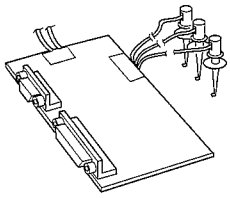
1. Alignment Tape
20HSC-3: No. 7099232



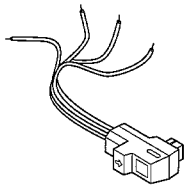
2. C12 Light Balancing Filter
No. 7099369



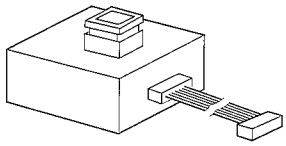
3. DSP-R Jig
No. 7099448



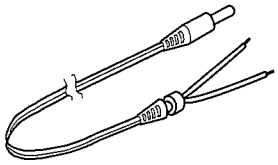
4. DSP Output Jig
[New Jig] No. EW12261



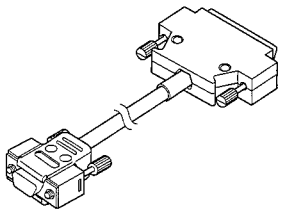
5. 8 - 20 Pin Extension Cable
No. TS15411



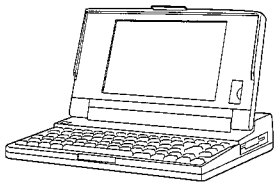
6. ODC DC Cord
No. TE13171



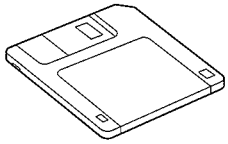
7. Personal Computer Cable
RS-232C (9 pin or 25 pin)
Straight Type Cable
[Goods on the market]



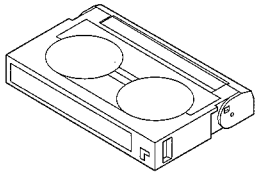
8. Personal Computer
[Goods on the market]



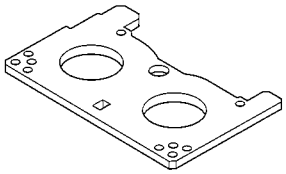
9. Adjustment Floppy Disk ***[New Jig]***
3.5-inch: No. TP12321



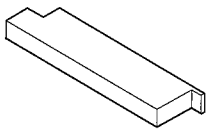
10. Cassette Torque Meter *(*1)*
SRK-8T-232: No. 7099236
SRK-8T-212: No. 7099402



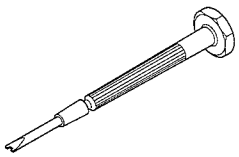
11. Master Plane *(*1)*
No. 7099237



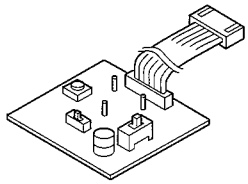
12. Reel Disk Height Jig *(*1)*
No. 7099238



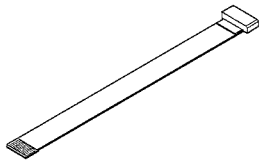
13. Special Driver *(*1)*
No. 7099239



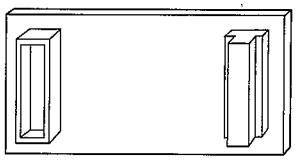
14. ATF-R Jig *(*1, *2, *3)*
No. 7099461



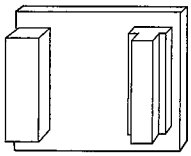
15. 4 Pin Extension Cable
No. 7069203



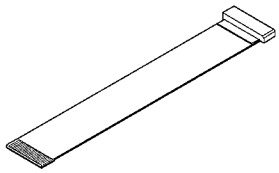
16. 80 Pin Extension Board
No. JP25461



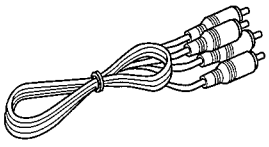
17. 120 Pin Extension Board ***[New Jig]***
No. JP31011



18. 10 Pin Extension Cable ***[New Jig]*** No. JP31061



19. AV Output Cable
[Accessory]



Caution for jigs

**1.* Using the mechanism adjustment/service.
**2.* Always set SW3 on the ATF-R jig to ON.
**3.* The ATF jig (No.7099386) can also be used in place of ATF-R jig to adjust this model.
**4.* Either the monaural or stereo AV output cable can be used.

HOW TO USE THE EXTENSION CABLE AND JIG

NAME OF JIG	PARTS No.	HOW TO USE
DSP Output Jig	EW12261	Used for electrical adjustment. Connected PG905 (8 pins) on the VCA circuit board. Refer to Fig.1-1 on the page 3-1.
8 - 20 Pin Extension Cable	TS15411	
4 Pin Extension Cable	7069203	Installed between the VCA circuit board and mechanism state (mode) switch.
80 Pin Extension Board	JP25461	Installed between the VCA circuit board and CON circuit board.
120 Pin Extension Board	JP31011	Installed between the VCA circuit board and DV circuit board.
10 Pin Extention Cable	JP31061	Installed between the DV circuit board and cylinder (video head).

SERVICE POSITION

NOTE:

1. If the front cover assembly is connected to the VCA circuit board, the provided remote control can be used to operate the camera/recorder without connecting the CON circuit board.
2. The VCR block can be operated with the camera chassis assembly removed.

(1) VCA Circuit Board
(2) UH Mechanism
(3) Mechanism Frame
(4) Rear Cover (Power Terminal Unit)
(5) TW/PW Switch
(6) DV Circuit Board
(7) SE Circuit Board
(8) Camera Chassis Assembly
(9) EVF
(10) CON Circuit Board
(11) Front Cover Assembly
(12) Jack Unit
(13) LCD
(14) Speaker

(A) 4 Pin Extention Cable
(B) 80 Pin Extention Board
(C) 120 Pin Extention Board
(D) 10 Pin Extention Cable

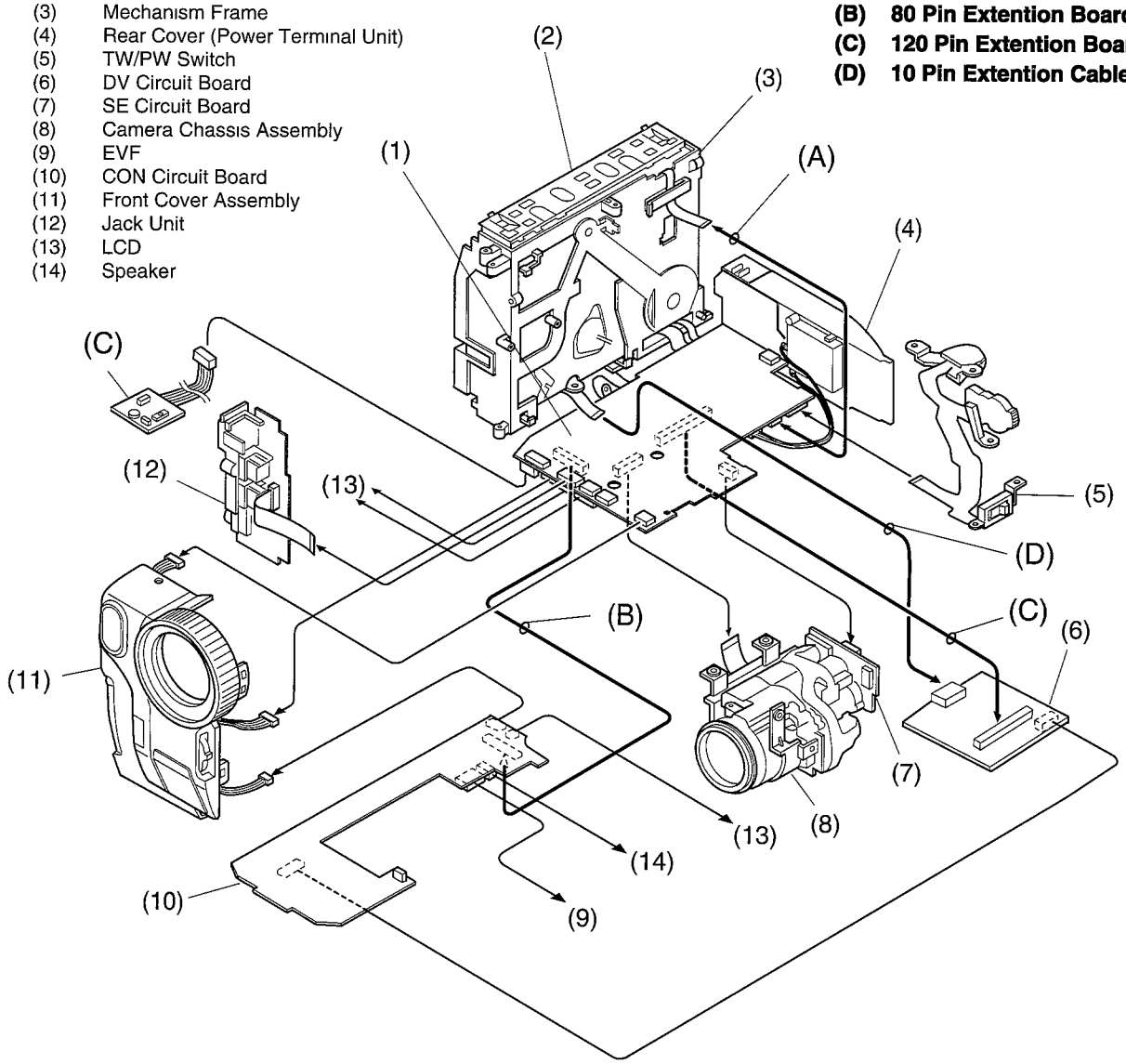


Fig.1-1 Service Position

SERVICE MANUAL ABBREVIATION LIST

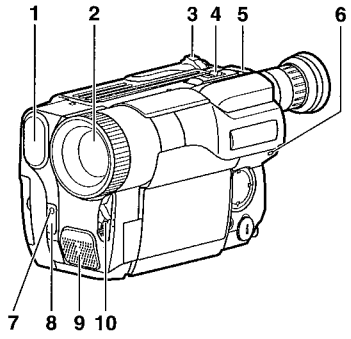
A	
A (A-)	Analog
ACC	Automatic Color Control
A/D	Analog-to-Digital Converter
ADD	Adder
ADP.	Adapter (AC Adapter)
ADRS	Address
A.DUB	Audio Dubbing
AF	Automatic focus (Autofocus)
AFC	Automatic Frequency Control
AGC	Automatic Gain Control
AGC KILLER	AGC Killer Voltage
AI	Automatic Intelligence
AIC	Automatic Iris Control
ALC	Automatic Level Conrol
AMP	Amplifier
APC	Automatic Phase Control
ASBL	Assemle (Phase Matching)
ATRS	Auto Tape Recording System
AUD.	Audio
AUX	Auxiliary
B	
B (BLU)	Color Signal Blue
BATT.	Battery
BF	Burst Flag
BG	Burst Gate or Back Ground
BGP	Burst Gate Pulse
BLC	Backlight Compensation
BLK	Blanking
BPF	Bandpass Filter
BUF.	Buffer Amplifier
B-YL	Color Difference Signal B-YL
C	
C (CHROMA)	Chrominance Signal
CAM	Camera
CAPST.	Capstan
CARRI.	Carrier
CATV	Cable TV
C.BLK	Composite Blanking
CCD	Charge Coupled Device
CDS	Correlated Double Sampling
C.FG (CFG)	Capstan Frequency Generater
C.FREE RUN	Capstan Free Run
CG	Character Generator
CH (Ch or ch)	Channel
CHARA.	Character
CHD	Camera Horizontal Drive Pulse
C.MEMORY	Counter Memory
CNR	Chroma Noise Reducer
COM.	Common
COMPA.	Comparator
COMPE.	Compensator
COMP-EXP	Compressor-Expander
COMPO	Composite
CONT.	Control
CONV.	Converter
COUNT.	Counter
CP	CP
C.PAUSE	Camp Pulse
C/R	Capacitor/Resistor
C.RESET	Countor Reset or Camera Reset
C.REVERSE	Count Reverse
CS	Communication Signal

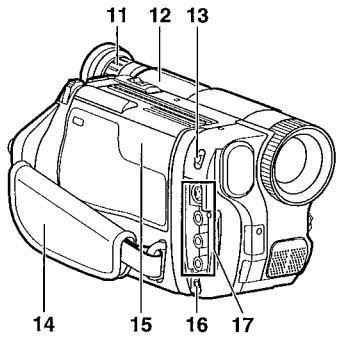
C	
CST	Cassette
C.SYNC	Composite Synchronizing Signal
CTL	Control Track Pulse (Control)
CYL	Cylinder
D	
D (D-)	Digital
DA	Double Azimuth
D/A	Digital to Analog Converter
D-D	Direct Drive
DEEMPHA.	Deephasis
DEF	Deflefction
DEMOD.	Demodulator
DET	Detector
DIFF. AMP	Differential Amplifier
Digital 8 (D8)	Digital 8 mm
DISP.	Display
DL	Delay Line
DO	Dropout
DOC	Dropout Compensator
DSP	Digital Signal Processor
DUB	Dubbing
DV	Digital Video
DVD	Digital Versatile Disc
D-VHS	Digital VHS
D/W	Dark/White
D.ZOOM (DZ)	Digital Zoom
E	
EAROM	Electrically Alterable Read Only Memory
E-E	Electronic-to-Electronic
EEPROM	Electrical Erasable Proframmed Memory
EIS (E.I.S.)	Electronic Image Stabilizer
EMPHA.	Emphasis (EMPH)
EQ	Equalizer
ESS	End Sensor Supply (Supply End Sensor)
EST	End Sensor Take-up (Take-up End Sensor)
EVF	Electronic Viewfinder
EXT.	External
E.ZOOM	Electrolical Zoom
F	
F.ADV	Frame Advance
FB	Feed back
FE	Full Erase
FF (F/F)	Flip Flop
F.FWD	Fast Forward
FG	Frequency Generator
FM	Frequency Modulation
FREQ.	Frequency
fsc	Sub Carrier Frequency
F/V	Frequency-to-Voltage Converter
FWD	Forward
G	
G (GRN)	Color Signal Green
GEN.	Generator
GND	Ground
H	
H (HORIZ.)	Horizontal
HB	Hi-Band
HBF	Horizontal Burst Flag
HD	Horizontal Drive

H	
Hi-Fi	High Fidelity
HPF	High-pass Filter
HSW	Head Switch
I	
IF	Intermediate Frequency or Interface
INDI.	Indicator
INST.	Instant
INT.	Internal
INV.	Inverter
I/O	In/Out (Input/Output)
IR	Infrared Rays
L	
LB	Low-Band
LCD	Liquid Crystal Dissplay
LIN.	Linear
LM	Loading Motor
LNC	Line Noise Canceller
LOG	Logarithm
LP	Long Play
LPF	Low-pass Filter
L/R	Left/Right
LUMA	Luminance
M	
MAN	Manual
M.BRAKE	Main Brake
M.CUT	Monitor Cut
MEM.	Memory
MIC	Microphone
MIX	Mixer
MMV	Monostable Multivibator
MOD.	Modulator
MPEG	Noving Picture coding Experts Group
M.STATE	Mechanism State
M.STOP	Memory Stop
N	
NEG	Negative
NFB	Negative Feed Back
NOR. (NORM)	Normal
NR	Noise Reduction
O	
OB	Optial Black
OSC	Oscillator
OSD	On-Screen Display
P	
PB (PLAY)	Playback
PCM	Pulse Code Modulation
PG	Pulse Generator
PLL	Phase Locked Loop
POS.	Positive
PROG.	Program
PROT.	Protector
PWM	Pulse Width Modulation
R	
R (RED)	Color Signal Red
RAM	Random Access Memory
REC	Record
RECT.	Rectifier
REF.	Reference
REG.	Regulator
REV	Review
REW	Rewind
RF	Radio Frequency

R	
ROM	Read Only Memory
RSS	Reel Sensor Supply (Supply Reel Sensor)
RST	Reel Sensor Take-up (Take-up Reel Sensor)
R-YL	Color Difference Signal R-YL
S	
SAW	Sawtooth Signal
SC1 (0°)	3.58MHz Subcarrier Signal 1 (0-degree Phase Shifted)
SC2 (90°)	3.58MHz Subcarrier Signal 2 (90-degree Phase Shifted)
SEPA. (SEP)	Separator
S/H	Samle and Hold
SP	Standard Play or Speaker
S.REEL	Supply Reel Sensor
SRCH	Search
SRV	Servo
STABI.	Stabilizer
S.TRACK	Slow Tracking
STBY	Standby Mode
S-VHS	Super VHS
SW	Switch
SW30Hz (15 or 25Hz)	30Hz Head Switching Pulse (15 or 25Hz Head Switching Pulse)
SYNC	Synchronizing signal
SYS.CON	System Control
T	
T (TELE)	Telephoto Angle
TAPE +	Recording Hi-8 Quality Image on Normal Tape
TBC	Time Base Corrector
T.BRAKE	Take-up Brake
TP	Test Point
T.REEL	Take-up Reel Sensor
TRS	Transfer
V	
V (VERT.)	Vertical
V.AGC	AGC Voltage
VCO	Voltage Controlled Oscillator
VCXO	Voltage Controlled Crystal Oscillator
VD	Vertical Drive
V.DUB	Video Dubbing
VHS	Video Home System
VOL.	Volume
VP	Voltage Pulse
W	
W (WIDE)	Wide Angle
WHD	Wide Horizontal Drive
WHT	Color Sifnal White
WHT BAL.	White Balance
Y	
Y	Luminance Signal
Y/C	Luminance/Chrominance
YEL (Ye)	Color Signal Yellow
YL	Luminance Signal (Low Component)

IDENTIFYING CONTROLS





1. Built-in DC Light (p54) (for VM-D965LE)

2. Lens Door (p23)
The lens door will open automatically when the camera/recorder is set to the camera (CAM) mode

3. Power Zoom Control (p33)

4. Cassette Eject Switch (p18)

5. Shoulder Strap Slot (p12)

6. Charge Indicator (p13)

7. Record Indicator (p23)

8. Infrared Receiver (p24)

9. Microphone

10. CAM/OFF/VIDEO Power Switch (p23)
CAM: Set to this position to record
VIDEO: Set to this position to play back a tape

11. Diopter Control (p11)
To adjust the viewfinder eyepiece to suit your eyesight

12. Electronic Viewfinder (p11)

13. DC Light Switch (p54) (for VM-D965LE)
To switch the DC light between ON, OFF and AUTO

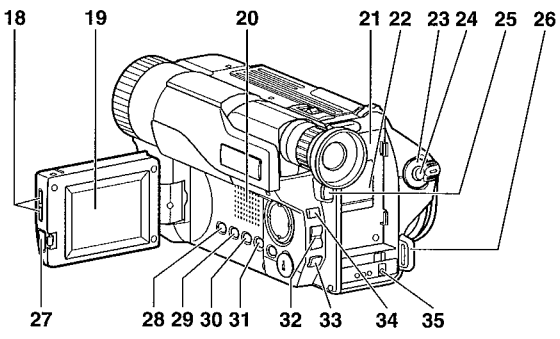
14. Hand Strap (p12)

15. Cassette Holder (p18)
Insert cassette here

16. Microphone Jack
Connect external microphone (not supplied) here

17. Audio/Video Jacks (Behind the jack cover) (p50)
Connect the provided AV cable from this jack to the AV jack of your TV or VCR

IDENTIFYING CONTROLS



18. LCD Brightness Controls (p10)

19. 2.5-inch LCD Monitor (p9)

20. Speaker (p27)

21. Power Supply Attachment Section (p16)

22. Clock Battery Compartment (p8)

23. Sub Power Switch (p23, 26)
PHOTO (for VM-D965LE):
Pressing the Start/Stop button will record still pictures
STANDBY: Pressing the Start/Stop button will start recording
LOCK: The camera/recorder will not enter the record mode even if the Start/Stop button is pressed.

24. Start/Stop Button (p23, 26, 29)
This works as a recording Start/Stop button in the CAM mode and as a playback pause button in the VIDEO mode

25. BATT. EJECT Lever (p14)
Sliding, and then holding, this switch, remove the battery from the camera/recorder

26. Shoulder Strap Slot (p12)

27. LCD Monitor OPEN Button (p9)
To open the LCD monitor.

28. DATE Button (p30, 31)
To set the date or display it.

29. EFFECT Button (p35)
To record digitally processed image picture with digital effect added

30. TITLE Button (p43)
To select or create a title, or display one

31. MENU Button (p20)
To display the menu

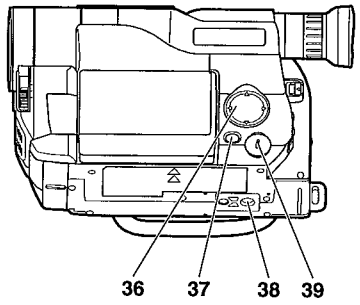
32. FOCUS/VOL Control Buttons (p27, 33)
CAM mode: To switch between auto focus and manual focus, or to control focus while in manual focus mode
VIDEO mode: To control playback volume

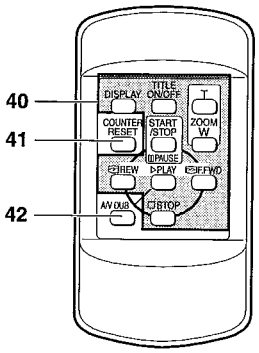
33. BLC (Backlight Compensation) Button (p40)
When recording a subject in bright light, hold this button down to compensate for lighting on tape

34. FADE Button (p36)
To select the desired fade made

35. DC IN Jack (p13, 17)
Use this jack to power the camera/recorder from the AC adapter or from battery in your vehicle

IDENTIFYING CONTROLS





REMOTE CONTROL

36. Tape Transport and Menu Setting Buttons (p20, 25)

Tape Transport Buttons:
▶ PLAY: To play back tape.
◀◀REW: To rewind tape.
■STOP: To stop tape.
▶▶FWD: To fast forward tape.

Menu Setting Buttons:
To select menu items and set details.

37. PROGRAMME AE Button (p39)
To change the exposure.

38. Tripod Mounting Threaded Socket

39. DV JACK (p52)

40. Recorder Remote Control
Same functions as the corresponding buttons on the camera/recorder

41. COUNTER RESET Button (only on the remote control) (p48)
To reset the time counter to 0:00:00

42. A/V DUB Button (only on the remote control) (p53)
To dub audio and video.

DUBBING FROM THE CAMERA/RECORDER TO A VCR

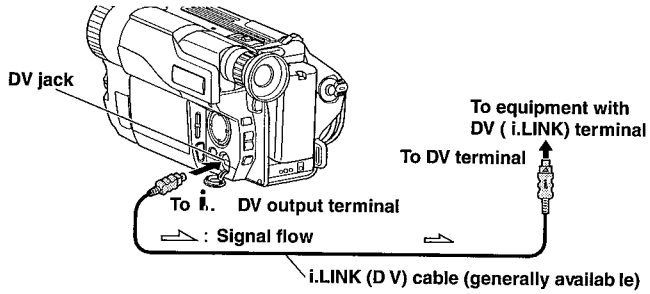
Connect the camera/recorder to a VCR to copy your or a friend's home 8mm recordings to VHS.

1 Connect your camera/recorder to the VCR, following "Playing Back Your Recording on Your TV" on pages 50.
2 Turn on your VCR and place it in the camera/recorder input mode (consult your VCR manual for details). Operate the television as you normally do to see the signal coming from the VCR
3 Hold down the small button of the CAM/OFF/VIDEO switch while you slide the switch to VIDEO
4 Insert the recorded tape in the camera/recorder and a blank tape into the VCR Set the VCR to record
5. Play the tape from the camera/recorder while recording on the VCR

NOTES:
- If the VCR is connected to a television and the VCR/TV selector is set to VCR, you can monitor the tape being dubbed
- Reduce the volume of the camera/recorder as low as possible durin gdubbing Otherwise the played back picture scould be distorted.

Connections with an i.LINK (DV) cable

You can connect this camera/recorder to video equipment with a DV terminal, using an i.LINK (DV) cable for dubbing. There will be minimal deterioration of video and audio since the digital signal is transferred The information displayed on the screen cannot be dubbed


DV jack
To equipment with DV (i.LINK) terminal
To DV terminal
To i. DV output terminal
: Signal flow
i.LINK (D V) cable (generally availab le)

1. Open the cover of DV jack
2 Use an i LINK cable to connect the camera/recorder to your equipment
3. Turn your equipment on. If the equipment has an input select or, set it to "DV input" (consult your equipment manual fordetails)
4 Hold down the small button of the CAM/OFF/VIDEO switch while you slide the switch to VIDEO
5 Insert the recorded tape in the camera/recorder and a blank tape into the equipment Set the equipment to record
6. Play the tape from the camera/recorder while recording on the equipment

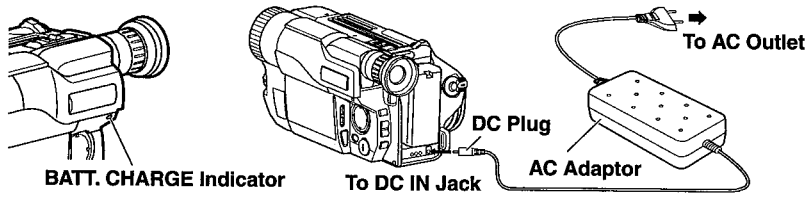
NOTES:
- Reduce the volume of the camera/recorder as low as possible during dubbing Otherwise the played back pictures could be distorted
- i.LINK is the name identifying the IEEE 1394-1995 interface standard and its expanded specifications
  * IEEE: Institute of Electrical and Electronic Engineers.
  iLINK and i LINK logo " i. " are taredemarks of Sony Corporation

CHARGING THE BATTERY

The first step is to set the battery for charging. To charge the battery, attach it to the camera/recorder, and connect the VM-ACE5E AC adaptor. Charge the battery at a temperature range of 10°C – 30°C to prevent damage to the battery.

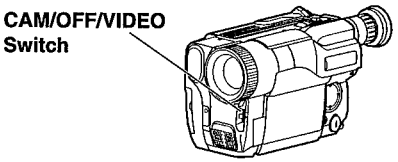
NOTES:

- This camera/recorder operates with a lithium ion battery such as VM-BPL13/VM-BPL30/VM-BPL60.
- We cannot be responsible for any malfunctions of the camera/recorder which occur when you use battery packs other than those specified.

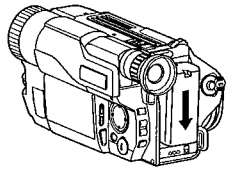


Charge the battery on a flat surface that is free of vibration.

1. Make sure the CAM/OFF/VIDEO switch is set to OFF position.



2. Attach the battery pack to the camera/recorder.
   - Place the battery on the guide platform and slide it down so that it fits into the camera/recorder.



NOTE: Always attach a battery only by the procedure described here. Attaching a battery forcibly could damage it.

3 Plug the AC adaptor power cord into an AC outlet.

4. Connect the AC adaptor DC plug to the DC IN jack of the camera/recorder. Charging will start within five seconds.

During charging, the BATT CHARGE indicator of the camera/recorder will flash or light to give you a reference of the charged level

NOTES:

- **If the BATT. CHARGE indicator flashes once every two seconds, the battery could be defective.**
- **The BATT. CHARGE indicator will not lightat all when the AC adaptor is defective.**
- You can use the battery before it is completely charged.
- When charging is complete, the BATT. CHARGE indicator on the camera/recorder will light. If the fully charged battery is removed and then re-attached, the camera/recorder will again enter the charge mode, and the BATT. CHARGE indicator will flash It will take a few minutes for the camera/recorder to enter the charge complete status.
- Charging at low temperatures will decrease charge capacity.

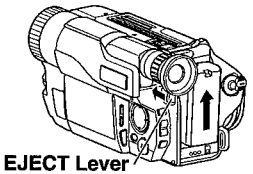
5. After charging is complete, disconnect the AC adaptor DC plug from the camera/recorder.
6. Disconnect the AC plug from the AC outlet.
7. Detach the battery from the camera/recorder.

NOTES:

- Always remove the battery from the camera/recorder after use.
- Charging is not done when the CAM/OFF/VIDEO switch of the camera/recorder is set to CAM or VIDEO. However, if recording pause continues for more than 5 minutes in the CAM mode, the camera/recorder will automatically turn off, after which charging will start.
  If the sub-power switch is set to LOCK, charging will take place even when the CAM/OFF/VIDEO switch is set to CAM.
- If the DC plug is disconnected when the battery is attached and the CAM/OFF/VIDEO switch is set to CAM or VIDEO, the camera/recorder will turn off once, but then automatically turn on again. Note that the battery will discharge if the camera/recorder is left as it is.

■ Removing the battery pack

Slide the BATT. EJECT lever in the direction of the arrow and hold it; then slide the battery to the upper side and remove



■ Reference of charged level

You can know the approximate charge level of battery by observing how the BATT CHARGE indicator of camera/recoder flashes or lights:

Charge level	BATT. CHARGE indicator
0-50% charge	Flashes once at approx one-second intervals
50-75% charge	Flashes twice at approx one-second intervals
More than 75% charge	Flashes three times at approx one-second intervals
Full charge	Steady light

■ Charging time

Charging \ Battery	VM-BPL13	VM-BPL30	VM-BPL60
Full charge	3h	5h 30 min	9h 50 min.
75% charge	1h 50 min.	3h 40 min.	7h

■ Operating time

The camera/recorder operating time depends on how often you turn power on/off and use start/stop and zoom

Continuous recording

EVF: when using the viewfinder
LCD: when using the LCD monitor

Battery	VM-BPL13	VM-BPL30	VM-BPL60
EVF	1h 45 min	3h 55 min	8h 5 min
LCD	1h 35 min	3h 25 min	7h 25 min

Typical recording

EVF: when using the viewfinder
LCD: when using the LCD monitor

Battery	VM-BPL13	VM-BPL30	VM-BPL60
EVF	1h	2h 20 min	4h 50 min
LCD	50 min	2h	4h 10 min

Notes on the battery

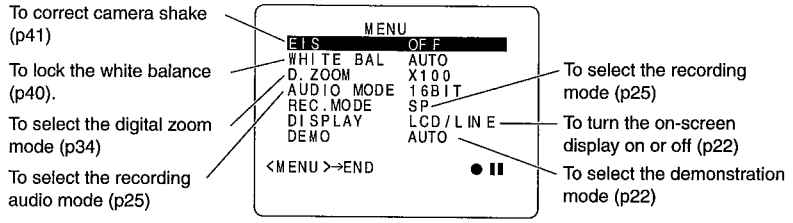
- It is recommended that the battery always be left in the discharged state when not in use, and charged before you use it.
- Avoid storing a fully charged battery, and do not store it in a place where the temperature is high: this will damage the battery.
- Do not operate the battery at temperature below –10°C or above 45°C At extremely low temperatures operation time decreases, while at high temperature the battery may be damaged
- Do not attach a hot battery to the camera/racorder Allow it to cool
- There are no user-serviceable parts inside the battery or AC adaptor.
- Throwing the battery into fire or exposing it to excessive heat (above 60°C) may cause injury
- Shorting the battery's terminal increases risk of fire or electrical shock.

ITEMS SELECTABLE WITH MENU DISPLAYS

The items that can be selected depend on the position of CAM/OFF/VIDEO switch.
NOTE: The VM-D965LE menu displays are used for the following explanation Some items do not appear, depending on the model

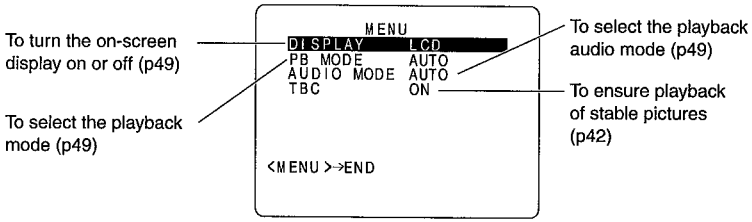
Menu selectable in the CAM mode

When the MENU button is pressed, the following menu display will appear;


To correct camera shake (p41)
To lock the white balance (p40).
To select the digital zoom mode (p34)
To select the recording audio mode (p25)
MENU
EIS OFF
WHITE BAL AUTO
D. ZOOM X100
AUDIO MODE 16BIT
REC.MODE SP
DISPLAY LCD/LINE
DEMO AUTO
<MENU>→END
To select the recording mode (p25)
To turn the on-screen display on or off (p22)
To select the demonstration mode (p22)

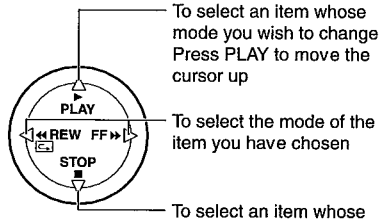
Menu selectable in the VIDEO mode

Pressing the MENU button will display the following:


To turn the on-screen display on or off (p49)
To select the playback mode (p49)
MENU
DISPLAY LCD
PB MODE AUTO
AUDIO MODE AUTO
TBC ON
<MENU>→END
To select the playback audio mode (p49)
To ensure playback of stable pictures (p42)

How to select items and set them

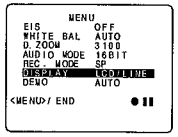
1 Press the MENU button
2. Press the PLAY or STOP button to select the desired item.
3. Use the FF or REW button to select the desired mode
4 Press the MENU button again to determine the mode.


To select an item whose mode you wish to change Press PLAY to move the cursor up
PLAY
REW FF
STOP
To select the mode of the item you have chosen
To select an item whose mode you wish to change Press STOP to move the cursor down

SWITCHING ON-SCREEN DISPLAY ON/OFF

Using menu selection, you can turn off the camera/recorder status display during recording, and turn it on again afterwards

1 Set the CAM/OFF/VIDEO switch to CAM
2. Press the MENU button
3. Press the PLAY or STOP button to select "DISPLAY".
4 Press the REW or FF button to select the desired mode:
LCD (or EVF): Information on the tape remaining, time counter, etc is displayed on the monitor screen
LCD/LINE (or EVF/LINE): M is displayed beside the time counter ("Memory Feature", p48). When LCD/LINE (or EVF/LINE) is specified, you can view the information in the memory displayed on the monitor screen, which will be superimposed on the playback picture seen on the connected TV
OFF: Information on tape remaining, time counter, etc is not displayed.



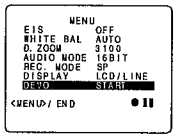
NOTES:
- The battery remaining power level will be displayed when you use a battery pack as a power supply.
- The date and recording status are displayed on the monitor screen.

5 Press the MENU button.

DEMONSTRATION MODE

Using the menu, you can switch the demonstration mode that is set in this camera/recorder.

1. Set the CAM/OFF/VIDEO switch to CAM
2. Press the MENU button.
3. Press the PLAY or STOP button to select "DEMO".
4. Press the REW or FF button to select the desired mode:
AUTO: If you leave the camera/recorder for 10 minutes without inserting a cassette when no date has been set, or the clock battery is dead, the demonstartion mode will automatically engage.

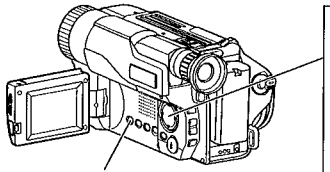


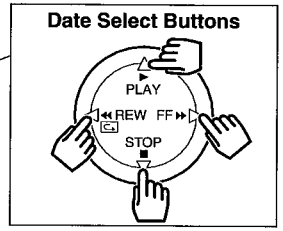
START: The demonstartion mode will also start after the MENU button is pressed and START is specified.
OFF: The demonstration mode is off.

5. Press the MENU button
NOTE: The demonstration mode will continue until power is turned off, or the MENU button is pressed and "AUTO" or "OFF" is specified

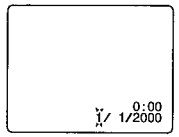
DATE/TIME SETTUNG

The date and time can be recorded on your tapes to act as a handy reference when viewing them at a later time Use the following procedure to set up this display for the current date and time.
Make sure that the current time is displayed correctly before you start recording.
NOTE: Be sure to insert the clock battery before setting the date and time Although the date and time can be set without the clock battery inserted, they will disappear when the battery providing power to the camera/recorder is removed

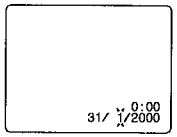




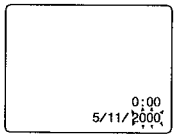
1 Slide the CAM/OFF/VIDEO switch to "CAM".
2. Open the LCD monitor, and then press the DATE button.
"0:00" and "1/1/2000" appears on the monitor screen and "1 (DATE)" flashes.



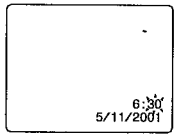
3. Press the PLAY or STOP button to select correct date. Pressing the PLAY button gives you higher numbers while the STOP button gives you lower numbers. When the correct date appears, press the FF button



4 Press the PLAY or STOP button to select correc tmonth When the correct month appears, press the FF button



5. Use the PLAY, STOP and FF buttons to select the correct year, hour and minute



6. After setting the minute, press the DATE button to start the internal clock
Pressing DATE again will turn off the date/time display.
It is recommended that you press the DATE button to match the time signal.

■ To correct date/time after starting the date/time

1 Hold down the DATE button for at least 3 seconds: The flashing cursor will appear at the date
2. Correct the incorrect digit by using the PLAY, STOP and FF buttons

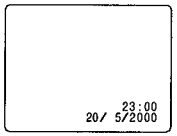
■ To correct date/time during programming

1. Press the FF button repeatedly until the digit that is incorrect flashes.
2 Correct the incorrect digit by using the PLAY, STOP and FF buttons.

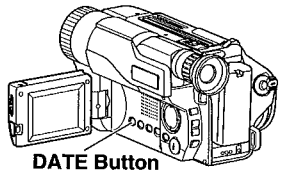
DISPLAYING DATE/TIME DURING PLAYBACK

During playback you can display the date/time a recording was made.
NOTE: If the date/time is not previousl y set, this function will not operate ("Setting the Date and Time" on page 30)

1. Press the DATE button during playback: The recording date/time will appear

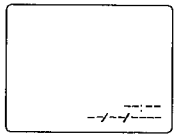


Pressing the DATE button again will turn off the date/time display.



NOTES:

- If you playback the tape portion recorded with the date not set, pressing DATE will display the following:



- This function will not work with Hi8/8 recorded tapes.

CHAPTER 2 DISASSEMBLY

1. BEFORE STARTING DISASSEMBLY

(1) Dismantle and reassemble the mechanism in loading stop status, except for the following components:
- Cassette Lid [Item 2.2]
- Top Cover [Item 2.2]
- Parts on the UH mechanism [Refer to service manual of the UH mechanism]

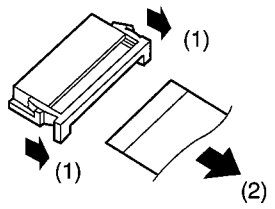
Note: After dismantling or resembling the cassette lid or top cover, return the mechanism to loading stop status.

(2) For manually operating the mechanism (unloading or loading), refer to: "3. How to Operate the Mechanism Manually (Page E2-10)".

(3) Dismantle each component according to "1.1 Disassembly Procedure".

(4) For reassembly, perform the reverse procedure to disassembly when not otherwise specified.

(5) Disconnect flat cables from connectors by the procedure shown in Fig. 1-1. Since many circuit boards in the camera/ recorder are connected by in-board connectors, be sure to follow DISASSEMBLY when removing the circuit boards.

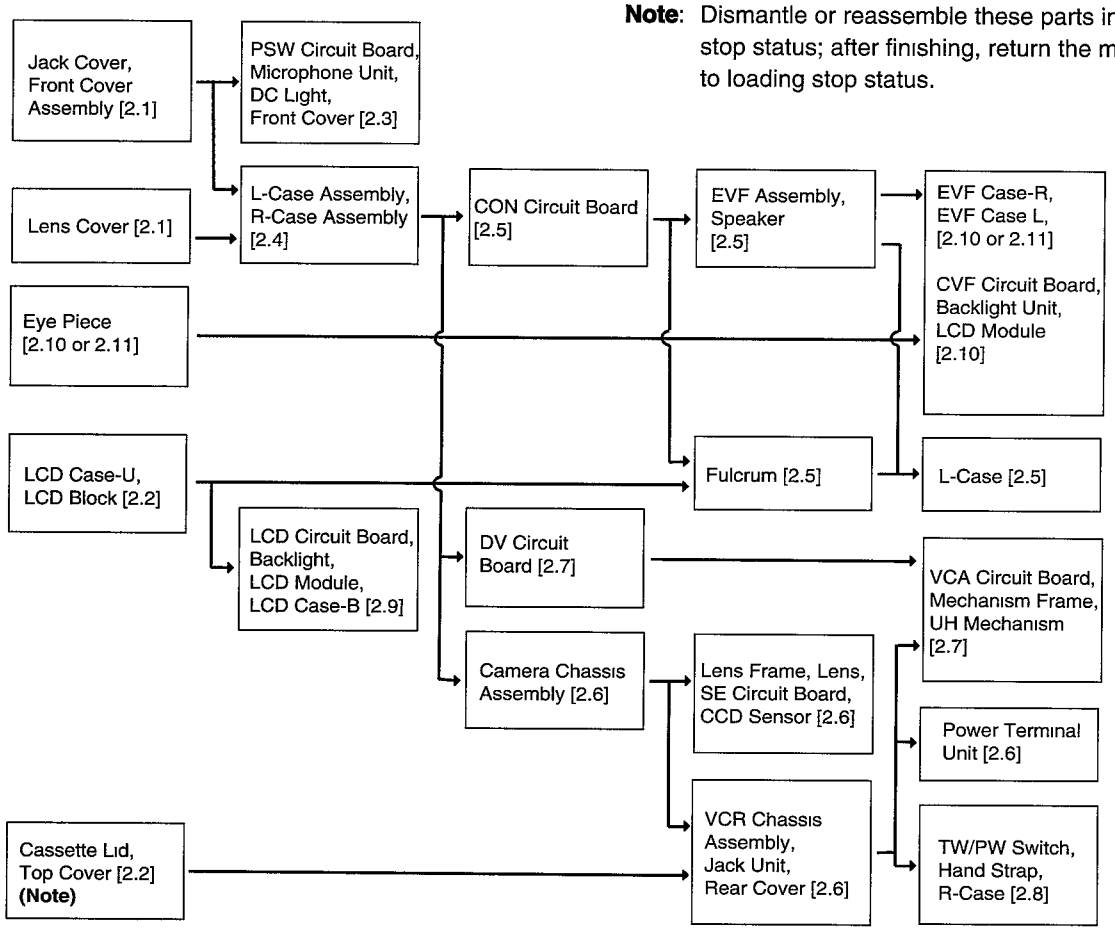


(1) Release the lock of the connector on the left and right simultaneously.
(2) Pull out the flat cable.

Fig. 1-1

1.1 Disassembly Procedure

Note: Dismantle or reassemble these parts in loading stop status; after finishing, return the mechanism to loading stop status.


Jack Cover, Front Cover Assembly [2.1]
PSW Circuit Board, Microphone Unit, DC Light, Front Cover [2.3]
Lens Cover [2.1]
L-Case Assembly, R-Case Assembly [2.4]
CON Circuit Board [2.5]
EVF Assembly, Speaker [2.5]
EVF Case-R, EVF Case L, [2.10 or 2.11]
CVF Circuit Board, Backlight Unit, LCD Module [2.10]
Eye Piece [2.10 or 2.11]
LCD Case-U, LCD Block [2.2]
Fulcrum [2.5]
L-Case [2.5]
LCD Circuit Board, Backlight, LCD Module, LCD Case-B [2.9]
DV Circuit Board [2.7]
VCA Circuit Board, Mechanism Frame, UH Mechanism [2.7]
Camera Chassis Assembly [2.6]
Lens Frame, Lens, SE Circuit Board, CCD Sensor [2.6]
Power Terminal Unit [2.6]
VCR Chassis Assembly, Jack Unit, Rear Cover [2.6]
TW/PW Switch, Hand Strap, R-Case [2.8]
Cassette Lid, Top Cover [2.2] (Note)

2. CASES AND CIRCUIT BOARDS REMOVAL

2.1 Jack Cover, Lens Cover, Front Cover Assembly (Fig. 2-1)

Caution:

- Be careful not to damage the cables of the microphone.

■ **Jack Cover (A)**

(1) Release 2 tabs and remove the jack cover from the R-case (G).

■ **Lens Cover (B)**

(2) Remove the lens cover in the direction of the arrow and O-ring (F).

■ **Front Cover Assembly (C)**

(3) Remove 3 screws holding the front cover assembly.

(4) TYPE 965: Disconnect 2 connectors on the VCA circuit board (D).
TYPE 865: Disconnect 1 connector on the VCA circuit board (D).

(5) Disconnect 1 connector on the CON circuit board (E).

Reinstallation procedure and caution:

- The O-ring (F) must be installed in the position shown in Fig. 2-1.

A: Jack Cover
B: Lens Cover
C: Front Cover Assembly
D: VCA Circuit Board
E: CON Circuit Board
F: O-Ring
G: R-Case
H: Lens Surface

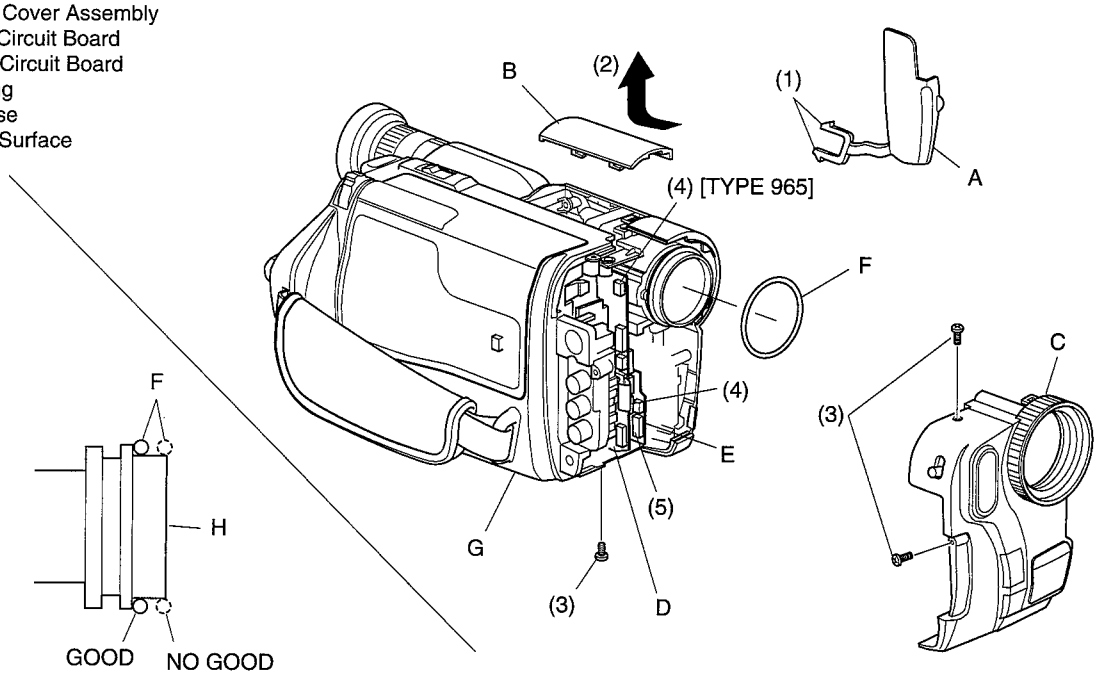


Fig. 2-1

2.2 LCD Case-U, LCD Block, Cassette Lid, Top Cover (Figs. 2-2-1, 2-2-2)

Cautions:

- Dismantle and reassemble only the cassette lid and top cover in loading stop status. After work is completed, return the mechanism to loading stop status.
- Be careful that the LCD screen is not damaged or smudged. (If dirt adheres to it, use a soft cloth to wipe it off.)
- Handle the LCD module and backlight with extreme care.

■ **LCD Case-U (A)**

(1) Remove 3 screws holding the LCD case-U.
(2) Release 5 tabs and remove the LCD case -U.

■ **LCD Block (B)**

(3) Disconnect 2 connectors on the LCD circuit board.
(4) Remove 2 screws holding the LCD block.

■ **Cassette Lid (C)**

(5) Release 2 tabs of the cassette lid.

■ **Top Cover(D)**

(6) Insert a flat-bladed screwdriver (G) between the top cover and sub chassis (F), and push section (x) of the plate spring (E) in the direction of arrow (y), to remove the top cover in the direction of the arrow. (See Fig. 2-3-2)

Reinstallation procedure and caution:

- To install the cassette lid, first engage sections (z) with the cassette holder.

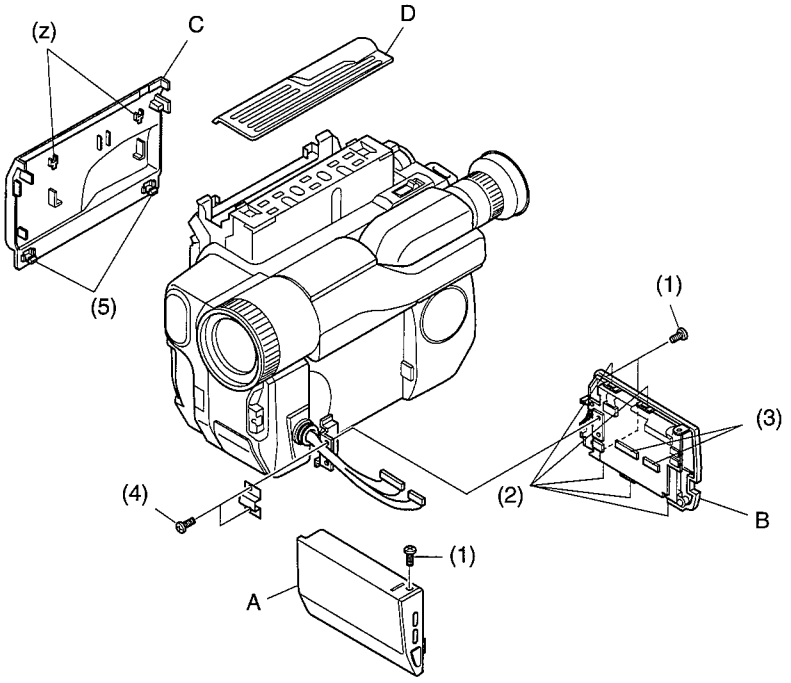
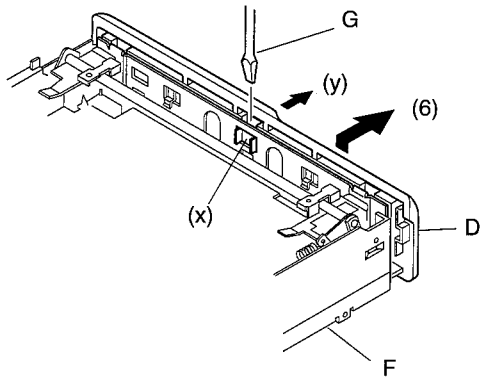


Fig. 2-2-1

A: LCD Case-U
B: LCD Block
C: Cassette Lid
D: Top Cover
E: Plate Spring
F: Sub Chassis
G: Flat-bladed Screwdriver



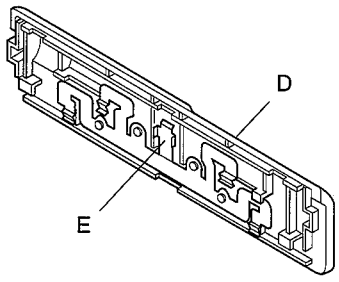


Fig. 2-2-2

2.3 PSW Circuit Board, Microphone Unit, DC Light [TYPE 965], Front Cover (Fig. 2-3)

■ **PSW Circuit Board (A)**

(1) Remove 1 screw holding the PSW circuit board.

■ **Microphone Unit (B)**

(2) Remove 2 screws holding the microphone unit and MIC plate (E).

■ **DC Light (C)** [TYPE 965]**, Front Cover (D)**

(3) Remove 2 screws holding the DC light.

Reinstallation procedure and caution:

- Take care with the orientation of the microphone when reinstalling it: The red wire is for the right side; the yellow lead is for the left side.

A: PSW Circuit Board
B: Microphone Unit
C: DC Light
D: Front Cover
E: MIC Plate
F: Adjustment (ADJ.) Lid

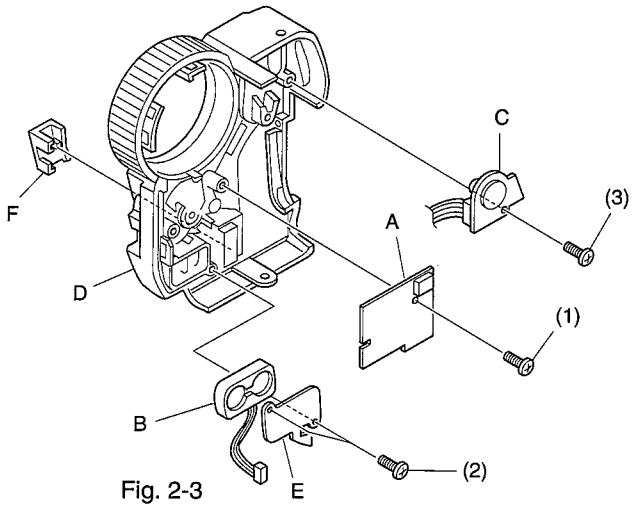


Fig. 2-3

2.4 L-Case Assembly, R-Case Assembly (Fig. 2-4)

Cautions:

- Be careful so as not to damage the connectors (PG0951 and PG0731) between the VCA and CON circuit boards.
- Be careful so as not to damage the cables (for LCD) and flat cable (for DV circuit board) between the L-case assembly and R-case assembly.

■ **L-Case Assembly (A) and R-Case Assembly (B)**

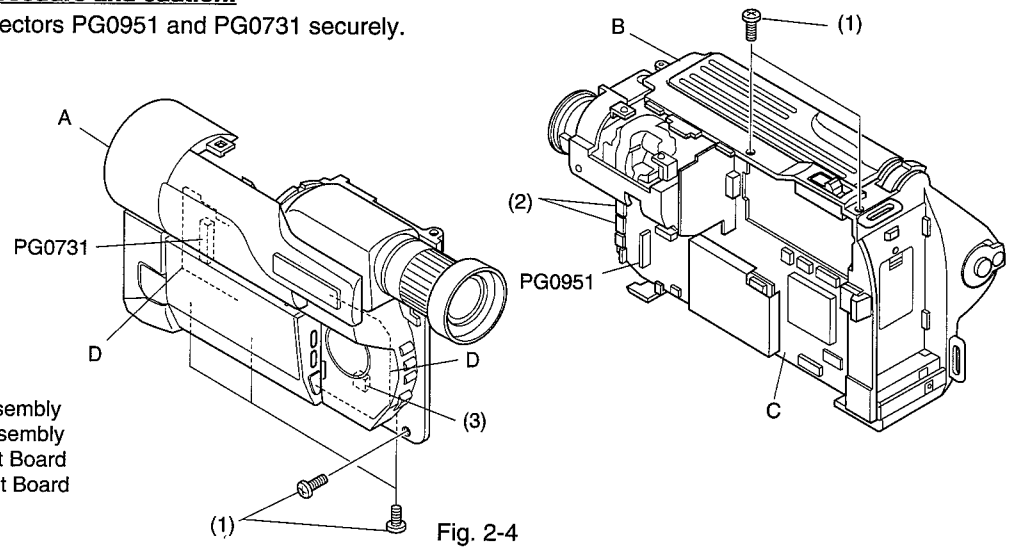
(1) Remove 6 screws holding the L-case assembly and R-case assembly.

(2) Disconnect 2 connectors on the VCA circuit board (C).

(3) Disconnect 1 flat cable on the CON circuit board (D).

Reinstallation procedure and caution:

- Connect connectors PG0951 and PG0731 securely.



A: L-Case Assembly
B: R-Case Assembly
C: VCA Circuit Board
D: CON Circuit Board

Fig. 2-4

2.5 CON Circuit Board, Electronic Viewfinder (EVF) Assembly, Speaker, Fulcrum, L-Case (Figs. 2-5-1, 2-5-2)

Caution:

- Be careful not to damage the LCD Open/Close switch (SW0773) on the CON circuit board.

■ **CON Circuit Board (A)**

(1) Disconnect 3 connectors on the CON circuit board.
(2) Remove 5 screws holding the CON circuit board.

■ **Electronic Viewfinder (EVF) Assembly (B)**

(3) Remove 3 screws holding the EVF Assembly.

■ **Speaker (C)**

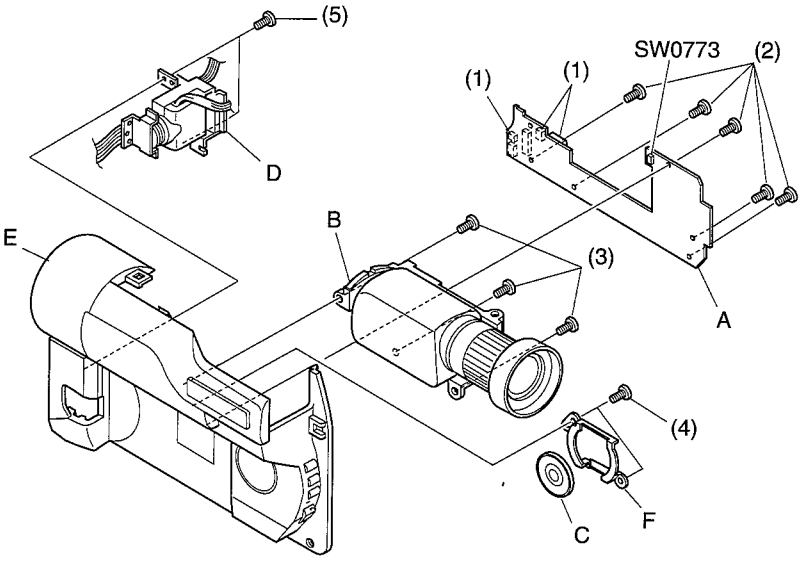
(4) Remove 2 screws holding the SP bracket (F) and speaker.

■ **Fulcrum (D) and L-Case (E)**

(5) Remove 2 screws holding the fulcrum.

Reinstallation procedure and caution:

- When reinstalling the CON circuit board, EVF assembly, speaker and fulcrum, lay out each cable as shown in Fig. 2-5-2.



A: CON Circuit Board
B: EVF Assembly
C: Speaker
D: Fulcrum
E: L-Case
F: SP Bracket

Fig. 2-5-1

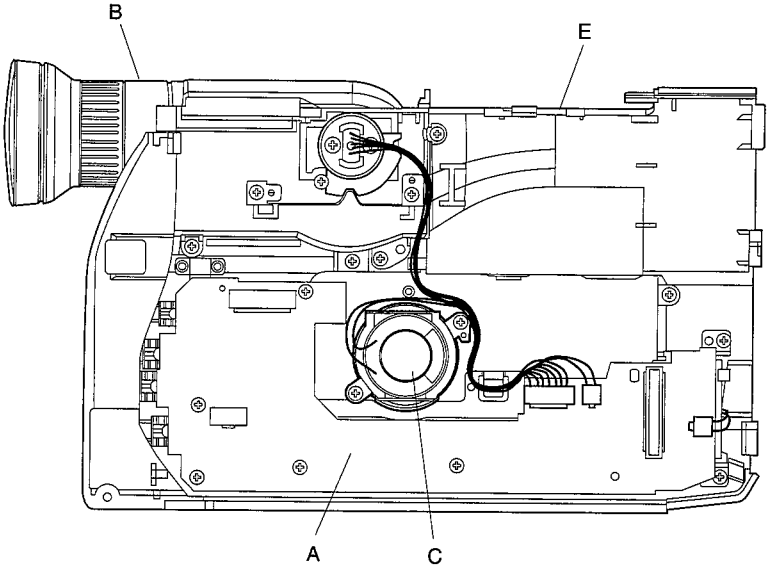


Fig. 2-5-2

2.6 Camera Chassis Assembly [Lens Frame, Lens, SE Circuit Board, CCD Sensor], VCR Chassis Assembly, Jack Unit , Power Terminal Unit, Rear Cover (Fig. 2-6)

Cautions:

- Be careful so as not to damage the connectors (PG0201 and PG1001) between the VCA and SE circuit boards.
- Be careful so as not to damage the connectors between the VCA circuit board (PG0001) and rear unit.
- Be careful not to damage the crystal filter and CCD sensor.

■ **Camera Chassis Assembly (A)** [Lens Frame (K), Lens (F), SE Circuit Board (J), CCD Sensor (I)]

(1) Disconnect 1 flat cable on the VCA circuit board (L).
(2) Remove 3 screws and remove camera chassis assembly in the direction of the arrow.
  (2-1) Remove 3 screws holding the lens frame.
  (2-2) Remove 2 screws holding the lens.
  (2-3) Remove 2 screws holding the CCD sensor.
  (2-4) Unsolder 14 points (terminal of the CCD sensor) on the SE circuit board.

■ **VCR Chassis Assembly (B)**

(3) Disconnect 1 connector on the VCA circuit board (L).
(4) Disconnect 1 flat cable on the VCA circuit board (L).
(5) Remove 1 screw and remove the rear cover (E) in the direction of the arrow.
(6) Release 1 tab and remove the VCR chassis assembly from R-case (M).

■ **Jack Unit (C)**

(7) Disconnect 1 flat cable on the jack unit.
(8) Remove 1 screw holding the jack unit and R-case.

■ **Rear Cover (D) and Power Terminal Unit (E)**

(9) Remove 1 screw holding the power terminal unit.
(10) Release 3 tabs of the power terminal unit.

Reinstallation procedure and cautions:

- Connect connectors PG0201 and PG1001 securely.
- Connect connectors PG0001 and rear unit securely.
- The crystal filter is non-directional.
- Fit in the CCD sensor parallel to the SE circuit board, fix it with screws, and then solder it.

A: Camera Chassis Assembly
B: VCR Chassis Assembly
C: Jack Unit
D: Rear Cover
E: Power Terminal Unit
F: Lens
G: Crystal Filter
H: Shading Rubber
I: CCD Sensor
J: SE Circuit Board
K: Lens Frame
L. VCA Circuit Board
M: R-Case

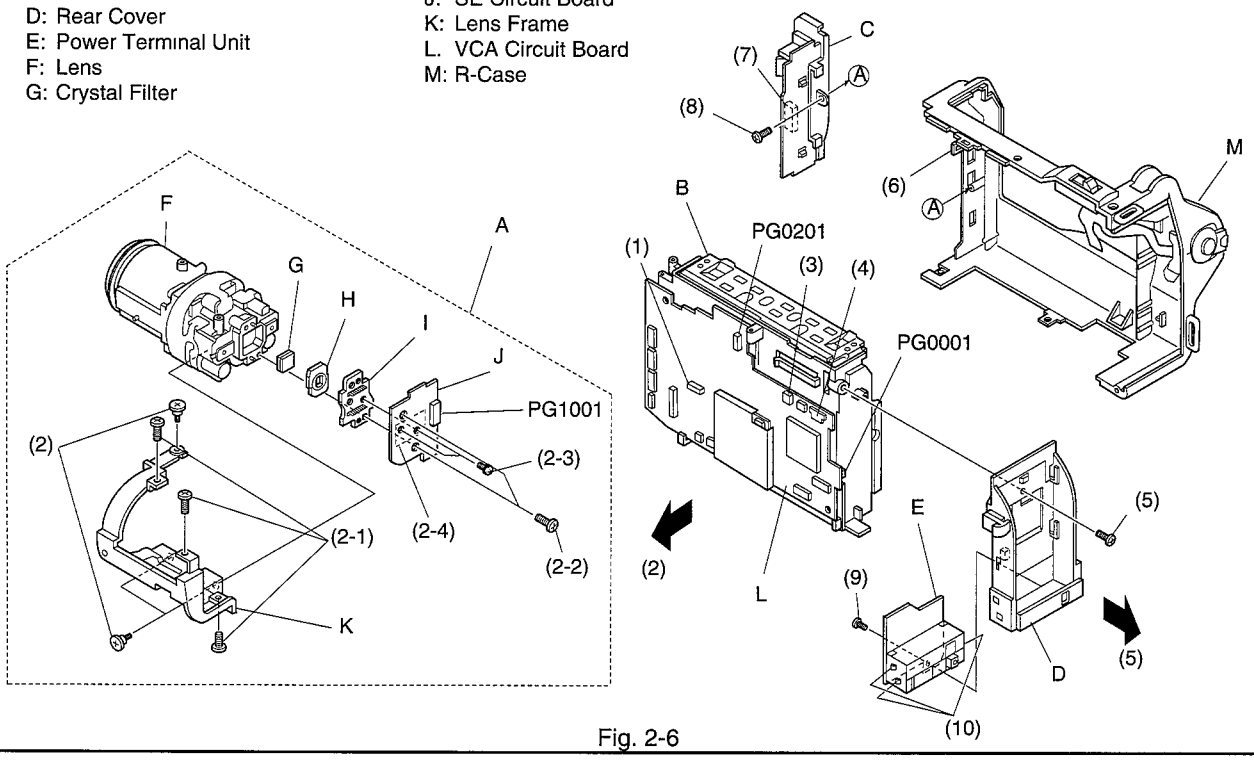


Fig. 2-6

2.7 DV Circuit Board, VCA Circuit Board, Meacanism Frame, UH Mechanism (Fig. 2-7)

Caution:

- Be careful so as not to damage the connectors (PG0202 and PG2102) between the VCA and DV circuit boards.

■ **DV Circuit Board (A)**

(1) Move the lower side of the DV shield (E) in the direction of the arrow and release 2 contacts.
(2) Move the upper side of the DV shield (E) in the direction of the arrow and release 2 contacts.
(3) Remove the DV shield (E) from the VCA circuit board in the direction of the arrow.
(4) Remove 1 screw holding the DV circuit board..
(5) Disconnect 1 flat cable on the DV circuit board.
(6) Remove the DV circuit board in the direction of the arrow.

■ **VCA Circuit Board (B)**

(7) Disconnect 1 connector and 4 flat cables on the VCA circuit board.
(8) Release 2 tabs holding the VCA circuit board.

■ **Mechanism Frame (C) and UH Mechanism (D)**

(9) Remove 3 screws holding the mechanism frame.
(10) Remove 1 screw holding the cylinder shield (F).
(11) Remove 1 screw holding the mechanism shield CE (G).

Reinstallation procedure and cautions:

- Connect connectors PG0202 and PG2102 securely.
- Connect contacts DV shield and VCA circuit board securely.

A: DV Circuit Board
B: VCA Circuit Board
C: Mechanism Frame
D: UH Mechanism
E: DV Shield
F: Cylinder Shield
G: Mechanism Shield CE

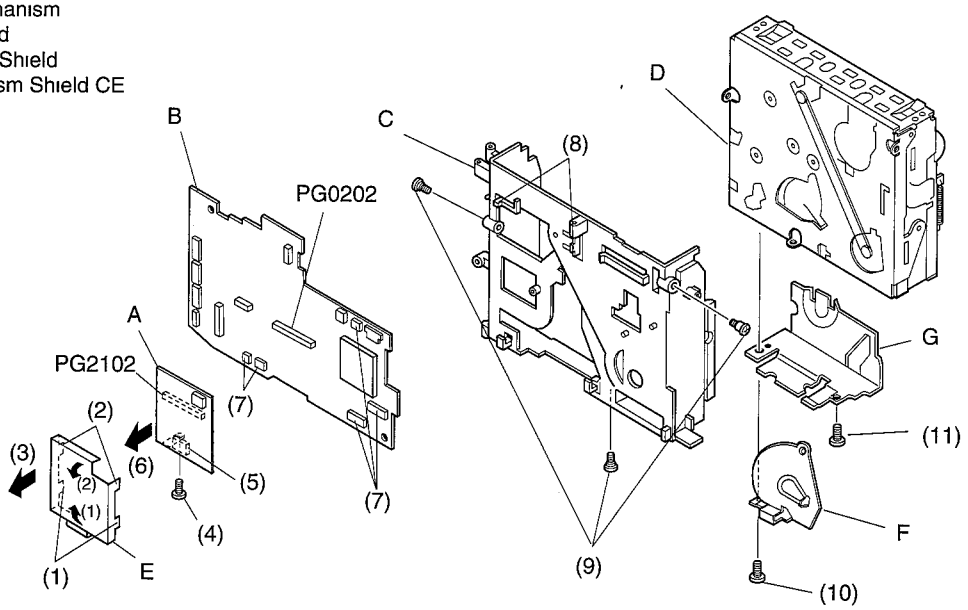


Fig. 2-7

2.8 TW/PW Switch, Hand Strap, R-Case (Fig. 2-8)

Caution:

- Be careful not to damage the flat cable of the TW/PW switch.

■ **TW/PW Switch (A), Hand Strap (B) and L-case (C)**

(1) Remove 5 screws holding TW/PW switch.
(2) Remove the hand strap from the R-case.

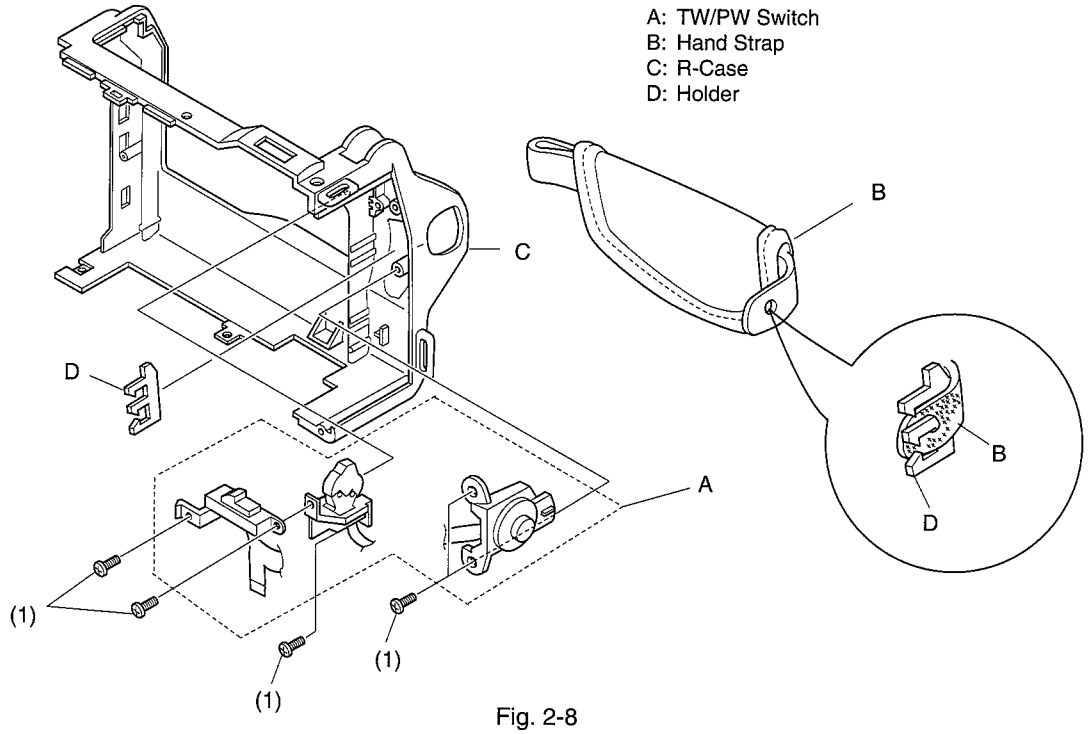


Fig. 2-8

2.9 LCD Circuit Borad, Backlight, LCD Module, LCD Case-B (Fig. 2-9)

Cautions:

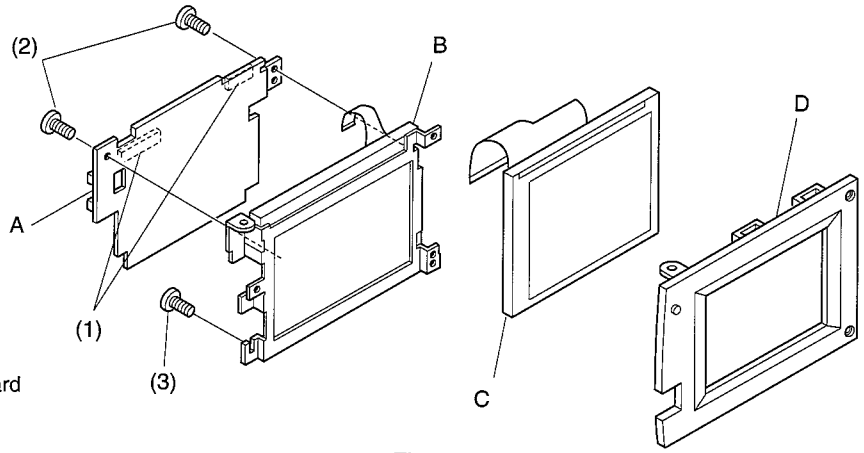
- Be careful that the LCD screen is not damaged or smudged. (If dirt adheres to it, use a soft cloth to wipe it off.)
- Handle the LCD module and backlight with extreme care.

■ **LCD Circuit Board (A)**

(1) Disconnect 2 flat cables on the LCD circuit board.
(2) Remove 2 screws holding the LCD circuit board.

■ **Backlight (B), LCD Module (C) and LCD Case-B (D)**

(3) Remove 1 screw holding the backlight.
(4) Remove the backlight and LCD module from the LCD case-B.



A: LCD Circuit Board
B: Backlight
C: LCD Module
D: LCD Case-B

Fig. 2-9

2.10 Eye Piece, EVF Case-R, EVF Case-L, CEVF Circuit Board, Backlight Unit, LCD Module (Fig. 2-10) [TYPE 965]

Cautions:

- Be careful that the LCD screen is not damaged or smudged. (If dirt adheres to it, use a soft cloth to wipe it off.)
- Handle the LCD module and backlight unit with extreme care.

■ **Eye Piece (A)**

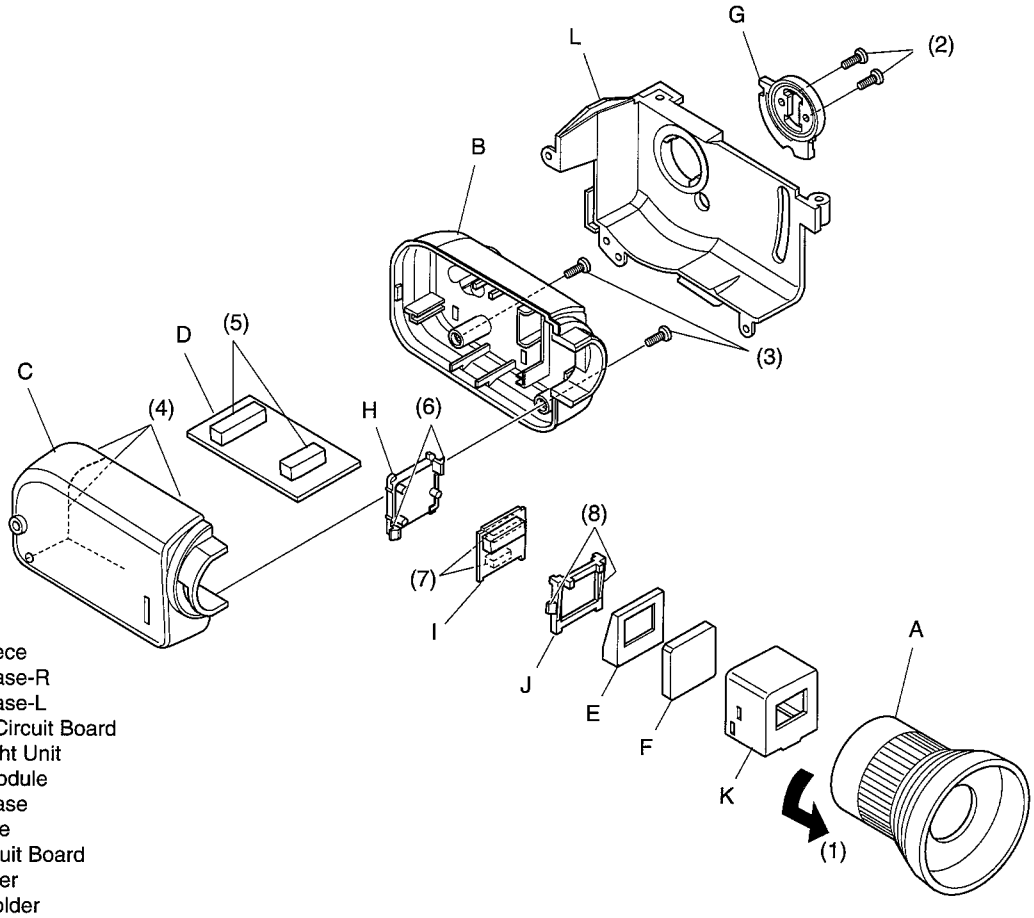
(1) Remove the eye piece in the direction of the arrow.

■ **EVF Case-R (B), EVF Case-L (C) and CEVF Circuit Board (D)**

(2) Remove 2 screws holding the turn base (G).
(3) Remove 2 screws holding the EVF case-R and L.
(4) Release 3 tabs and remove the EVF case-R and L.
(5) Disconnect 2 flat cables on the CEVF circuit board.

■ **Backlight Unit (E) and LCD Module (F)**

(6) Release 2 tabs of the BL plate (H).
(7) Disconnect 2 flat cables on the BL circuit board (I).
(8) Release 2 tabs of the BL cover (J).
(9) Remove the backlight unit and LCD module from the LCD holder(K).



A: Eye Piece
B: EVF Case-R
C: EVF Case-L
D: CEVF Circuit Board
E: Backlight Unit
F: LCD Module
G: Turn Base
H: BL Plate
I: BL Circuit Board
J: BL Cover
K: LCD Holder
L: EVF Base

Fig. 2-10

2.11 Eye Piece, EVF Case-R, EVF Case-L (Fig. 2-11) [TYPE 865]

Caution:

- Be careful not to damage the CRT.

■ **Eye Piece (A)**

(1) Remove the eye piece in the direction of the arrow.

■ **EVF Case-R (B) and EVF Case-L (C)**

(2) Remove 2 screws holding the turn base (D).
(3) Remove 2 screws holding the EVF case-R and L.
(4) Release 3 tabas and remove the EVF case-R and L

A: Eye Piece
B: EVF Case-R
C: EVF Case-L
D: Turn Base
E. CRT
F· EVF Base

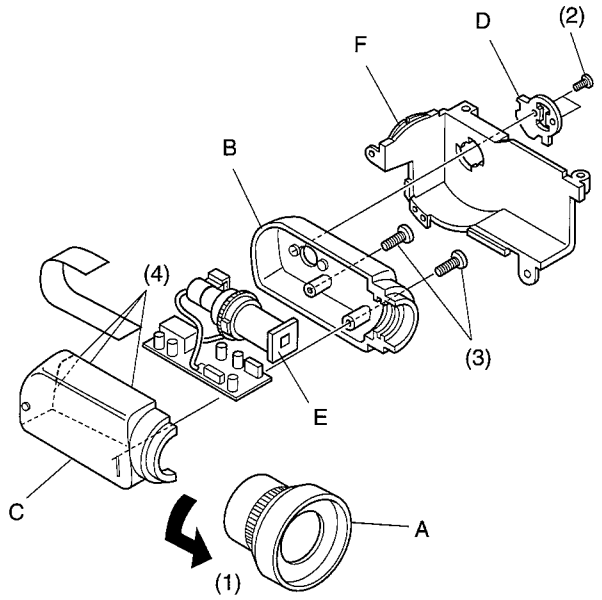


Fig. 2-11

3. HOW TO OPERATE THE MECHANISM MANUALLY

Caution:

- Perform this procedure for emergency only when normal loading or unloading is not possible because the electrical circuits or loading motor is defective.

(1) Remove the R-case assembly. (See Fig. 2-4)
(2) Disconnect connector (CN0604) from PG0604 on the VCA circuit board, and supply 4V DC to CN0604 (directly to the loading motor). (See Fig. 3-1)
Connecting CN0604 brown wire (+) and red wire (-) results in unloading.
Connecting CN0604 red wire (+) and brown wire (-) results in loading.

Note: To unload the mechanism with a tape inserted, manually turn the capstan motor simultaneously to take up the tape.

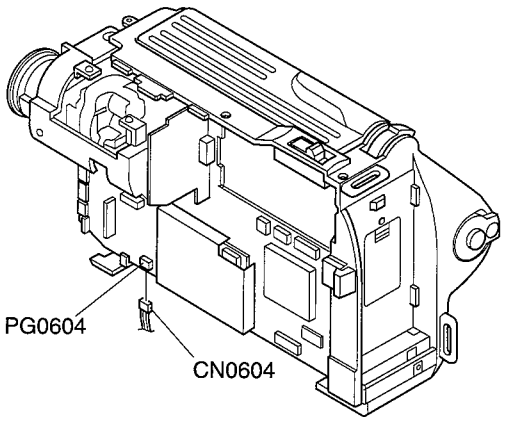


Fig. 3-1

If loading or unloading does not occur even when 4V DC is directly supplied to the loading motor, perform the following procedure:

(3) Remove the camera chassis assembly and rear cover. (See Fig. 2-6)

Note: Note that it is difficult to remove the rear cover.

(4) Move the lower side of the DV shield in the direction of the arrow and release 2 contacts. (See Fig. 3-2)
(5) Move the upper side of the DV shield in the direction of the arrow and release 2 contacts. (See Fig. 3-2)
(6) Remove the DV shield from the VCA circuit board in the direction of the arrow.
(7) Remove 1 screw holding the DV circuit board. (See Fig.3-2)
(8) Disconnect 3 flat cables. (See Fig. 3-2)
(9) Disconnect connector. (See Fig. 3-2)
(10) Disconnect 2 flat cables. (See Fig. 3-2)
(11) Remove 3 screws. (See Fig. 3-2)
(12) Remove the UH mechanism in the direction of the arrow from the R-case. (See Fig.3-2)

A: DV Shield
B: VCA Circuit Board
C: DV Circuit Board
D: R-Case
E: Mechanism Frame
F: UH Mechanism

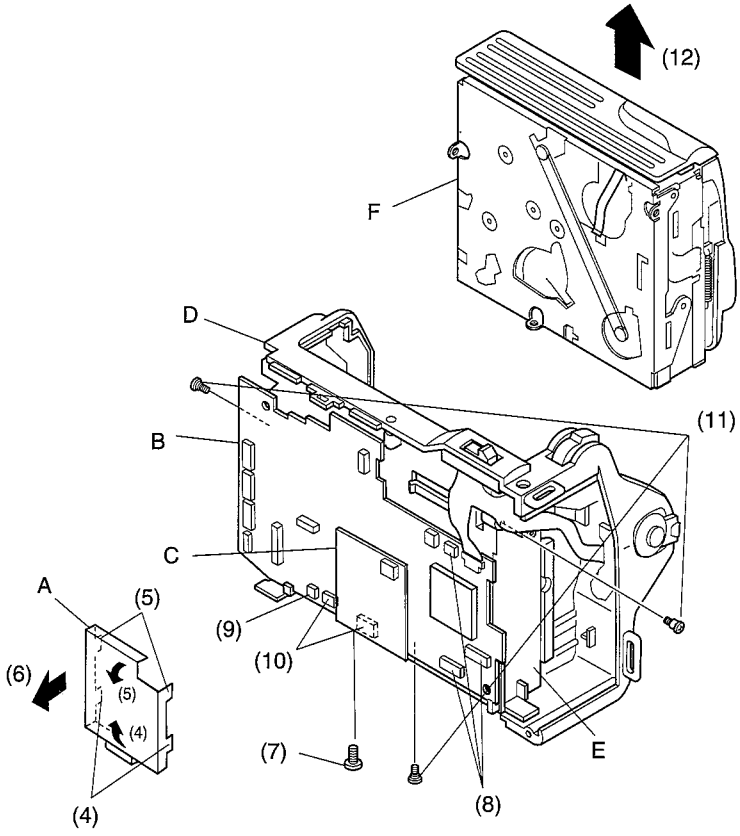


Fig. 3-2

(13) Remove the cassette lid and top cover. (See Figs. 2-2-1, 2-2-2)
(14) Release 2 tabs and pull out the loading motor from the loading motor holder. (See Fig. 3-3)

Note: The above removal is different from normal removal. In normal circumstances, remove the loading motor assembled with the loading motor holder. (The loading motor and loading motor holder comprise an assembly.)

(15) Turn over the mechanism. (See Fig. 3-3)

Note: Do not turn over with the idler cover removed.

(16) Use a flat-bladed screwdriver, etc. to turn cam gear (A) or (B). (See Fig. 3-3)
Turning it in the direction of the arrow will unload the mechanism, and turning it in the opposite direction to the arrow will load the mechanism.

Notes: • Be careful not to damage the cam gears.
• To unload the mechanism with a tape inserted, manually turn the capstan motor simultaneously to take up the tape.

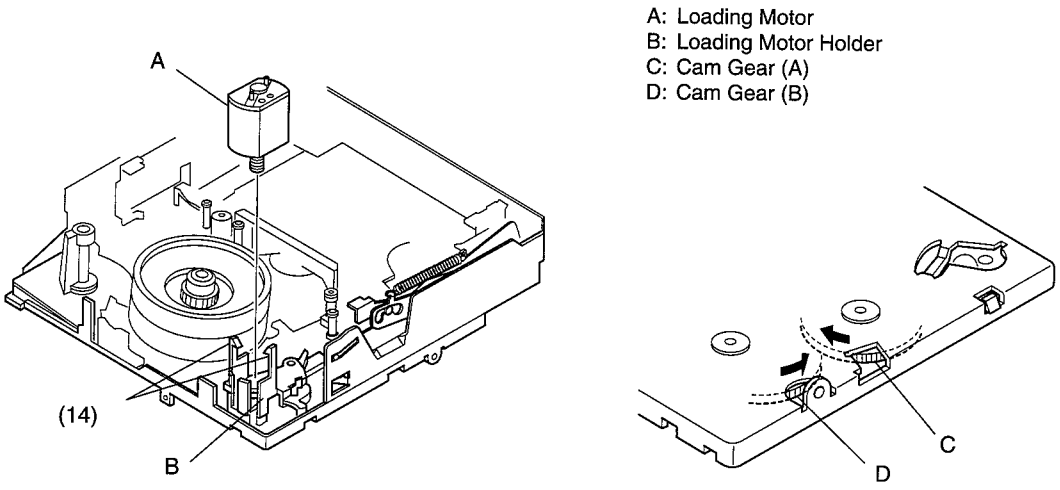


Fig. 3-3

CHAPTER 3 ELECTRIC CIRCUIT ADJUSTMENT

Trademark

MS-DOS is a registered trademark of Microsoft Corporation.

Abbreviation

MAP: Manual adjustment program for service.
DSP: Digital signal processor

1. CONNECTION FOR ADJUSTMENT

1.1 Before Starting Adjustment

(1) Set the date. (If the camera/recorder is left for several minutes with no date set after power is turned on, it will automati cally enter the demo mode.)
(2) Perform the electric circuit adjustments using a personal computer and adjustment floppy disk.
(3) It is not necessary to remove cases for electric circuit adjustments.
(4) The ODC DC cord is a jig which is to be used in the Power Shut Off Level (ODC) Adjustment.
For other adjustments, the AC adapter can be used as a power supply.
(5) Since the adjustment program is subject to change for improvements, computer displays may be different from those shown in this manual. In such cases, follow the computer displays for adjustment.
(6) The computer displays may be different from those shown in this manual, depending on the destination of models and whether or not certain functions are provided. In such cases, follow the computer displays for adjustment.

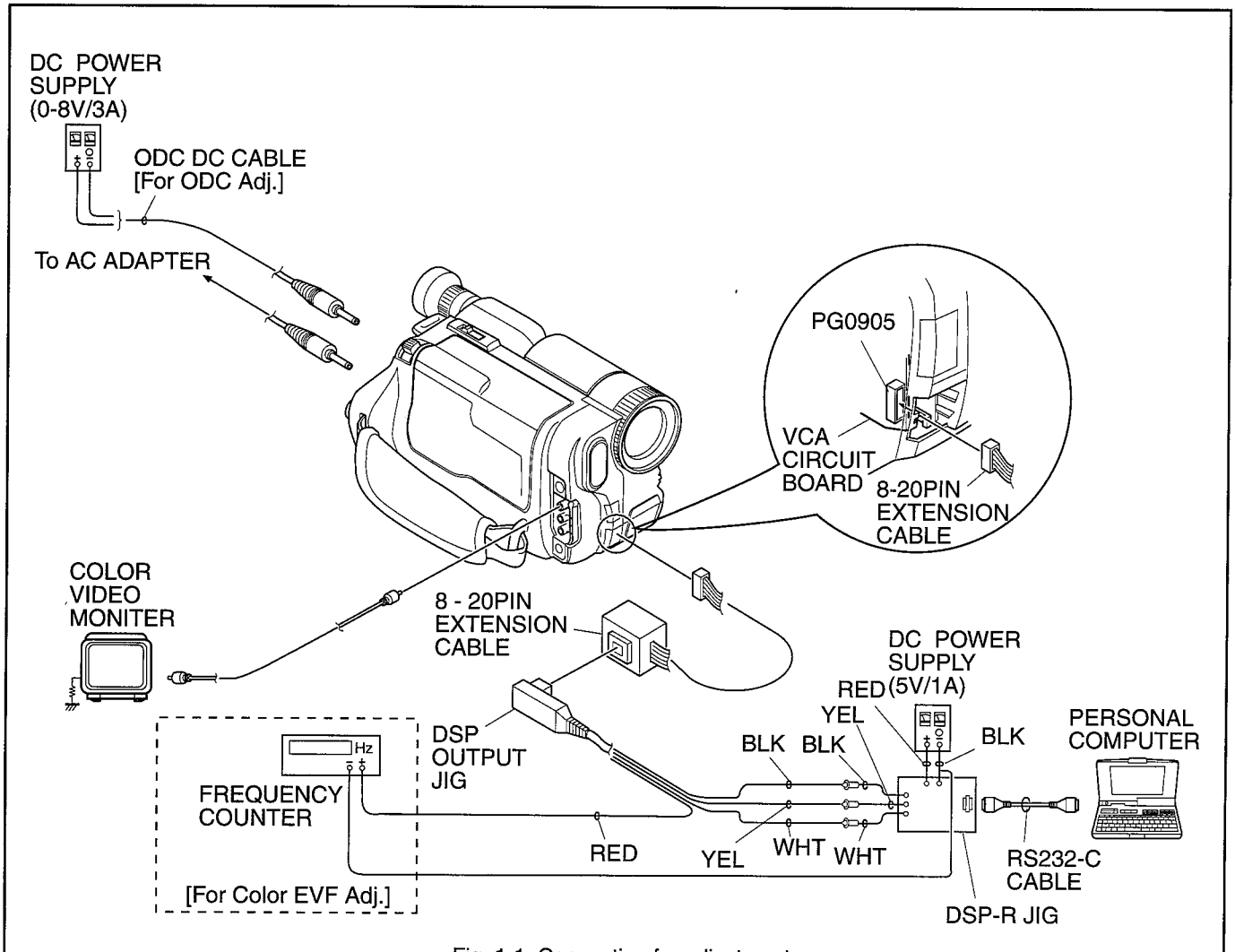


Fig. 1-1 Connection for adjustment

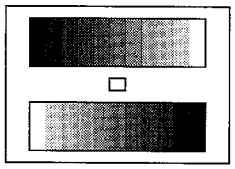
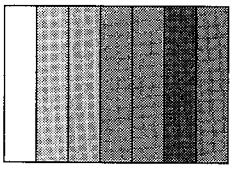
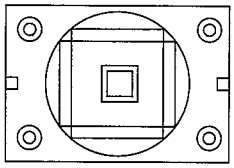
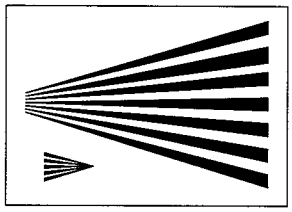
2. TEST EQUIPMENT NECESSARY FOR ADJUSTMENT

2.1 Test Equipment and Jigs

Oscilloscope (dual trace) [& Vectorscope]
Digital Voltmeter (DVM)
Color Video Monitor
Alignment Tape VM-D965LA/D865LA: 20HSC-2 [No. 7099231]
VM-D965LE/D865LE: 20HSC-3 [No. 7099232]
Blank Tape
Adjustment Floppy Disk
Personal Computer
Personal Computer 9-pin or 25-pin (RS232C) Cable
DSP-R Jig [No. 7099448]
DSP Output Jig [No. EW12261]
8 - 20 Pin Extension Cable [No. TS15411]
Light Box (3100 K)
Light Balancing Filter C12 [No. 7099369]
DC Power Supply (DC5V/1A)
DC Power Supply (DC0-8V/3A)
Frequence Counter
ODC DC code [No. TE13171]

2.2 List of Charts

Table 2-1

Gray Scale Chart	Color Bar Chart	Resolution Chart	Backfocus Adjustmant Chart
			

3. ADJUSTMENT CONDITIONS

(1) Use a light box with minimum flickering. Control the color temperature of the light box strictly.
(2) When using the video out jack to perform adjustment, be sure to terminate the video out jack with 75 ohms.
(3) Place the light box approx. 30cm away from the camera (lens surface) when otherwise not specified.
(4) Point the camera at the chart to full the video period when otherwise not specified.
(5) Use the 10:1 probe of the oscilloscope when otherwise not specified.
(6) When "Trigger the oscilloscope internally" is specified, set the time base of the oscilloscope to 10µs division.
(7) When "Record mode" is specified, load a blank tape and set the video camera/recorder to the record mode by the follow ing procedure.
  1) Set the CAM/OFF/VIDEO switch to the CAM position.
  2) Set the SUB POWER switch to STANDBY position.
  3) Press the REC START/STOP button on the unit (or REC START/STOP button on the remote control).
(8) Ground of test equipment: DV Shield (GND).

4. PRESET POSITIONS OF SWITCHES AND CONTROLS

CAM/OFF/VIDEO switch ..... "CAM" position [Except for LCD and VCR Adjustment]
"VIDEO" position [For LCD and VCR Adjustment]

SUB POWER switch ..... "STANDBY" position
DC LIGHT switch ..... "OFF" position [TYPE 965]
DATE ..... Not display mode
EFFECT ..... OFF mode
TITLE ..... Not display mode
BLC ..... OFF mode
PROGRAM AE ..... Not display (AUTO) mode
FOCUS ..... Autofocus mode
FADE ..... Not display (OFF) mode

MENU ..... Not display
CAM Mode Menu
EIS ..... OFF
WHITE BAL ..... AUTO
D.ZOOM ..... ×500
AUDIO MODE ..... 12 BIT
REC MODE ..... SP
DISPLAY ..... LCD/LINE
DEMO ..... AUTO or OFF
VIDEO Mode Menu
DISPLAY ..... LCD/LINE
PB MODE ..... AUTO
AUDIO MODE ..... AUTO
TBC ..... ON
A.IN+D.OUT ..... OFF

5. CHECK AFTER REPLACING MAJOR COMPONENTS

After replacing major components, perform adjustments, referring to the table below.
The following table shows the minimum adjustments required after major components are replaced.
The table below may not apply when several components are replaced, depending on the symptom of the defect.

Caution: When EEPROM or the VCA circuit board is replaced, initialize the EEPROM, referring to "Data Initialize" then perform all the adjustments.

Table 5-1

ITEM No.	NEME OF ADJUSTMENT	NAME OF MAJOR COMPONENTS								
		VCA Circuit Board	SE Circuit Board	LCD Circuit Board	CEVF Circuit Board	Lens Block	Cylinder	IC0901	IC1001	IC1104
Data Maintenanve										
(1)	Data Initialize	●								
Digital Adjustment										
(1)	Auto Iris Control Adjustment	●	●			●			●	●
(2)	White Balance Adjustment	●	●						●	
(3)	Chroma Gain Adjustment	●	●						●	
Autofocus Adjustment										
(1)	Zoom Trace Adjustment	●	●			●				
(2)	AF Noise Level Adjustment	●	●			●				
VCR Adjustment										
(1)	ODC Adjustment	●	●					●		
(2)	Head Switching Point Adjustment	●	●				●	●		
Stabilizer Adjustment		●	●							
Spot Noise Adjustment		●	●						●	
LCD Adjustment										
(1)	Flicker Adjustment]	●		●						
Color EVF Adjustment										
(1)	Horizontal Pulse Frequency Adjustmant	●			●					

ITEM No.	NEME OF ADJUSTMENT	NAME OF MAJOR COMPONENTS				
		IC1105	IC1201	IC1301	IC1401 IC1402 IC1403	
Data Maintenanve						
(1)	Data Initialize	●				
Digital Adjustment						
(1)	Auto Iris Control Adjustment	●	●			
(2)	White Balance Adjustment	●				
(3)	Chroma Gain Adjustment	●				
Autofocus Adjustment						
(1)	Zoom Trace Adjustment	●		●		
(2)	AF Noise Level Adjustment	●		●		
VCR Adjustment						
(1)	ODC Adjustment	●				
(2)	Head Switching Point Adjustment	●				
Stabilizer Adjustment		●			●	
Spot Noise Adjustment		●				
LCD Adjustment						
(1)	Flicker Adjustment]	●				
Color EVF Adjustment						
(1)	Horizontal Pulse Frequency Adjustmant	●				

6. HOW TO START THE MAP

1) Turn the personal computer on and start the MS-DOS.

Note: Refer to the instruction manual of the personal computer for how to start computer.

2) Load the adjustment floppy disk in to disk drive A and press **A:** [ENTER]. (Display 1-1)

3) Press **MAP_IBM** [SPACE] **1** [ENTER]. (Display 1-2)

Note: When you use a personal computer with two serial interface connectors and connect the DSP jig to serial interface connector 2, press MAP_IBM 2.

4) Select the number accodding to the model. (Display 1-3)
If [ESC] (escape) is pressed, the display before the MAP starts (MS-DOS) is restored.

Notes: • If the required model is not found, press the **P** key and select the model from the next screen.
• If you select number without a model name by mistake, the message shown in "MESSAGE WHEN OPERATED BY MISTAKE" will appear in the computer's display. (Display 1-4)
Press any key to return the display to MODEL SELECT dispaly.

5) Press **Y** key. (Display 1-5)
If **N** key is pressed, the computer's display returns to MODEL SELECT display.

6) Refer to display 1-6.

7. ADJUSTMENT PROCEDURE

Notes: • To complete adjustment, press the [ESC] (escape) key twice to restore the MS-DOS screen and then turn off the camera/recorder and jig.
• The following describes an example of the instructions of the personal computer and the menu display; they are different depending on the personal computer manufacturer and model.
Refer to the instruction manual of personal computer.
• When the error message appears during adjustment, refer to "8. Error Message".
If a key is pressed after an error message appears, the ADJUSTMENT MENU is restored.

Display & Figs

Display 1-1

```
C>A:
A:
```

Display 1-2

```
C>A:
A>MAP_IBM 1
```

Display 1-3

```
**********************************************
                MODEL SELECT
**********************************************

        [1]     xxxxxxx
        [2]     xxxxxxx
        [3]     xxxxxxx
        [4]     xxxxxxx
        [5]     xxxxxxx
        [P]     NEXT SELECTION
        [ESC]   END
    Please select the type of the set.
    Press [1] - [5] or [P] or [ESC]
```

Display 1-4

MESSAGE WHEN OPERATED BY MISTAKE

```
CAN NOT FIND THE DATA FILE
**** PRESS ANY KEY ****
```

Display 1-5

```
Selected model is x x x x x x x
Are you sure ? (Y/N)
```

Display 1-6

MAIN MENU

```
**********************************************
          MANUAL ADJUSTMENT PROGRAM
**********************************************

        [A]     DATA MAINTENANCE
        [B]     ADJUSTMENT
        [C]     AUTO FOCUS
        [D]     VCR ADJUSTMENT
        [E]     STABILIZER
        [F]     SPOT NOISE
        [G]     LCD
        [H]     COLOR EVF
        [ESC]   END
    Please select [A] - [H] or [ESC]
```

7.1 Data Meintenance

(1) Data Initialize

Before Starting Initial Setting:

- Initilizing EEPROM. Before performing this, see "Befor Servicing" in CAUTION. (See page CAUTION-3)
- This item describes how to initialize the EEPROM.
  Be sure to perform this item after replacing EEPROM or the VCA circuit board.
  When other components are replaced, normally, it is not necessary to initialize the EEPROM.
- Be sure to perform the following adjustments after completing the initial setting.
  - IEEE1394 ID No. Input Method
  - 7.2 Digital Adjustment
  - 7.3 Autofocus Adjustment
  - 7.4 VCR Adjustment
  - 7.5 Stabilizer Adjustment
  - 7.6 Spot Noise Adjustment
  - 7.7 LCD Adjustment
  - 7.8 Color LCD Adjustment

Procedure:

1) Start the MAP.
2) Refer to display 1-6.
3) Press **A** key.
4) Refer to display 2-1.
5) Press **1** key.
6) Refer to display 2-2.
7) Press **Y** key to start.

Note: Press **N** to return to MAIN MENU display.

8) Perform adjustment according to the computer display hereafter.
   See "8. Error Messages" if an error message appears on the computer display.

(2) IEEE1394 Maintenance

For IEEE1394 MAINTENANCE, see "Before Servicing" in CAUTION. (See page CAUTION-3)

Display & Figs

Display 1-6

MAIN MENU

```
**********************************************
MANUAL ADJUSTMENT PROGRAM
**********************************************
[A]    DATA MAINTENANCE
[B]    ADJUSTMENT
[C]    AUTO FOCUS
[D]    VCR ADJUSTMENT
[E]    STABILIZER
[F]    SPOT NOISE
[G]    LCD
[H]    COLOR EVF
[ESC]  END
  Please select [A] - [H] or [ESC]
```

Display 2-1

DATA MINTENANCE MENU

```
**********************************************
DATA MAINTENANCE
**********************************************
[1]    DATA INITIALIZE
[2]    IEEE1394 MAINTENANCE
[ESC]  RETURN TO MAIN MENU
  Please select [1] - [2] or [ESC]
```

Display 2-2

```
« DATA WRITING »
START TO SEND DATA.  (Y/N)
```

7.2 Digital Adjustment

Before Starting Adjstment:

When EEPROM or the VCA circuit board is replaced, ınitialize the EEPROM, referring to "Data Initialize" then perform all the digital adjustments.

1) Start the MAP.
2) Refer to display 1-6.
3) Press **B** key.
4) Refer to display 3-1.
5) Select the number of the required adjustment.

Notes: • If [ESC] (escape) is pressed, the computer's display returns toMAIN MENU display.
• To complete adjustment, press the [ESC] (escape) twice to restore the MS-DOS screen and then turn off the camera/recorder and jig.

(1) Auto Iris Control Adjustment

Purpose:

To set the ıris control data.

Incompleted Phenomenon:

The picture becomes too bright.
The picture becomes too dark.

Condition:

Point the camera at the light box without a chart to full the screen (at wide-angle).

Procedure:

1) Refer to display 3-1.
2) Press **1** key.
   Perform adjustment according to the computer display hereafter.
   See "8. Error Messages" if an error message appears on the computer display.
3) Refer to display 3-2.
4) Press any key to return to ADJUSTMENT MENU display.
5) Turn the power off for 5 seconds and then on again.

Display & Figs

Display 1-6
MAIN MENU

```
**********************************************
MANUAL ADJUSTMENT PROGRAM
**********************************************
[A]   DATA MAINTENANCE
[B]   ADJUSTMENT
[C]   AUTO FOCUS
[D]   VCR ADJUSTMENT
[E]   STABILIZER
[F]   SPOT NOISE
[G]   LCD
[H]   COLOR EVF
[ESC] END
  Please select [A] - [H] or [ESC]
```

Display 3-1
ADJUSTMENT MENU

```
**********************************************
ADJUSTMENT
**********************************************
[1]   AUTO IRIS CONTROL
[2]   WHITE BALANCE
[3]   CHROMA GAIN
[ESC] RETURN TO MAIN MENU
  Please select [1]- [3] or [ESC]
```

Display 3-2

```
ADJUSTMENT FINISHED
PRESS ANY KEY
```

(2) White Balance Adjustment

Purpose:

To set white balance under the color temperature which becomes a reference for the auto white balance circuit.

Incompleted Phenomenon:

Color of the subject is different from that of the picture.
A white subject is not seen as white.

Test Point:

Video Out Jack

Condition:

Attach a C12 filter.
Point at a gray scale chart (at wide-angle).

Procedure:

1) Refer to display 3-1.
2) Press **2** key.
3) Refer to display 3-3.
4) *[For VM-D965LA/D865LA]*
   Press **0** (ZERO) **A** to input the data.
   [For VM-D965LE/D865LE]
   Press **0** (ZERO) **9** to input the data.
5) Press [Enter] key, and the display changes as follows.
6) Refer to display 3-4.
7) *[For VM-D965LA/D865LA]*
   Press **0** (ZERO) **A** to input the data.
   [For VM-D965LE/D865LE]
   Press **0** (ZERO) **B** to input the data.
8) Press [Enter] key.
   Perform adjustment according to the computer displayhereafter.
   See "8. Error Messages" if an error message appears on the computer display.

Display & Figs

Display 3-1

ADJUSTMENT MENU

```
**********************************************
                ADJUSTMENT
**********************************************
   [1]     AUTO IRIS CONTROL
   [2]     WHITE BALANCE
   [3]     CHROMA GAIN
   [ESC]   RETURN TO MAIN MENU
     Please select [1]- [3] or [ESC]
```

Display 3-3

```
« WHITE BALANCE ADJUSTMENT »
  INPUT DATA OF OFFSET
                FOR R-B --> 00
```

Display 3-4

```
« WHITE BALANCE ADJUSTMENT »
  INPUT DATA OF OFFSET
                FOR Mg-G --> 00
```

(3) Chroma Gain Adjustment (Figs. 7-1, 7-2, 7-3)

Purpose:

To set the color saturation under the reference color temperature.

Incompleted Phenomenon:

Color of the picture is denser than that of the subject.
Color of the picture is lighter than that of the subject.

Equipment/Jig:

Oscilloscope (Vectorscope)

Test Point:

Video Out Jack

Condition:

Attach a C12 filter.
Point at a color bar chart.

Procedure:

1) Refer to display 3-1.
2) Press **3** key.
3) Rerer to dispaly 3-5.
4) *WhenUsing an Oscilloscope:*
   Press the **U** and **D** keys to set the red level to around 470mVp-p.
   Press the [Ctrl] key and hold it down, then press the **U** and **D** keys so the red level is 470mV ± 20mVp-p. (Fig. 7-1)
   When Using a Vectorscope:
   Press the **U** and **D** keys to set the red vector to around 170% of the burst.
   Press the [Ctrl] key and hold it down, then press the **U** and **D** keys so the red vector is 170% ± 5%. (Figs. 7-2, 7-3)
5) Press [Enter] key, and the display changes as 3-6 and 3-7.
6) Press any key to return to ADJUSTMENT MENU display.

Display & Figs

Display 3-1

ADJUSTMENT MENU

```
**********************************************
                ADJUSTMENT
**********************************************
   [1]     AUTO IRIS CONTROL
   [2]     WHITE BALANCE
   [3]     CHROMA GAIN
   [ESC]   RETURN TO MAIN MENU
     Please select [1]- [3] or [ESC]
```

Display 3-5

```
« ADJUSTMENT OF CHROMA GAIN »
          ROUGH ADJUSTMENT
[U]       CHROMA GAIN UP
[D]       CHROMA GAIN DOWN
          FINE ADJUSTMENT
[Ctrl] + [U] CHROMA GAIN UP
[Ctrl] + [D] CHROMA GAIN DOWN
[ENTER]   SAVE & RETURN TO MENU
[ESC]     QUIT
```

Display 3-6

```
« ADJUSTMENT OF CHROMA GAIN »
  DATA WRITING INTO EEPROM.
```

Display 3-7

```
« ADJUSTMENT OF CHROMA GAIN »
  ADJUSTMENT FINISHED.
  PRESS ANY KEY.
```

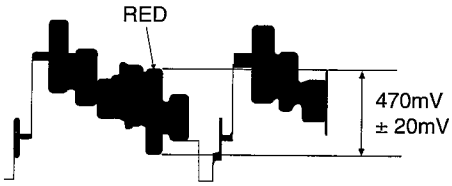


Fig. 7-1

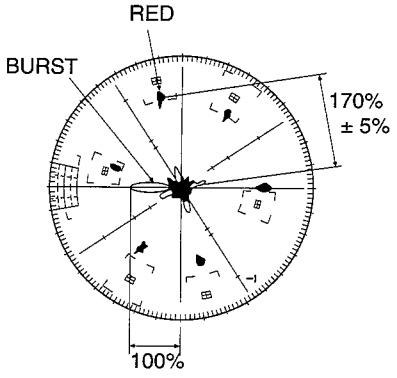


Fig. 7-2 [For VM-D965LA/D865LA]

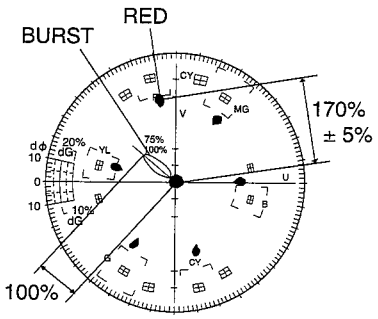


Fig. 7-3 [For VM-D965LE/D865LE]

7.3 Autofocus Adjustment

Before Starting Adjustment:

Be sure to perform this adjustment after replacing or initializing the lens block or VCA circuit board (EEPROM).

1) Start the MAP.
2) Refer to display 1-6.
3) Press **C** key.
4) Refer to display 4-1.
5) Select the number of the required adjustment.

Note: To complete adjustment, press the [ESC] (escape) twice to restore the MS-DOS screen and then turn off the camera/recorder and jig.

(1) Zoom Trace Adjustment

Purpose:

To set the out-of-focus correction level during zooming.

Incompleted Phenomenon:

Focus is lost during zooming.

Equipment/Jig:

Color Video Monitor
Backfocus Chart

Test Point:

Video Out Jack

Condition:

Point at the backfocus chart, 1500 ± 5 mm away from the lens surface.
Light the chart with 200-400 lx.

Caution When Adjustment:

1) Measure the distance between the chart and lens surface precisely.
2) Place the chart as parallel as possible to the lens surface.
3) The backfocus chart should always be at the center of the monitor screen when the zoom is set to the wide-angle and telephoto ends.
4) The zoom trace adjustment procedure is completed within 2 minutes after it is selected.
5) Do not place any obstruction between the lens and chart during adjustment.

Procedure:

1) Refer todisplay 4-1.
2) Press **1** key.
   Perform adjustment according to the computerdisplay hereafter.
   See "8. Error Messages" if an error message appears on the computer display.

Display & Figs

Display 1-6

MAIN MENU

```
**********************************************
  MANUAL ADJUSTMENT PROGRAM
**********************************************
   [A]    DATA MAINTENANCE
   [B]    ADJUSTMENT
   [C]    AUTO FOCUS
   [D]    VCR ADJUSTMENT
   [E]    STABILIZER
   [F]    SPOT NOISE
   [G]    LCD
   [H]    COLOR EVF
   [ESC]  END
     Please select [A] - [H] or [ESC]
```

Display 4-1

AF ADJ. MENU

```
**********************************************
      AUTOFOCUS ADJUSTMENT
**********************************************
[1]    ADJUSTMENT OF ZOOM/
              FOCUS TRACKING
[2]    ADJUSTMENT OF
              AF NOISE LEVEL
[ESC]  RETURN TO MENU
     Please select [1], [2] or [ESC]
```

(2) AF Noise Level Adjustment

Purpose:

To set the noise level in the autofocus circuit.

Incompleted Phenomenon:

It takes time until a subject is brought into focus.
Correct focus is not obtained.

Equipment/Jig:

Color Video Monitor

Test Point:

Video Out Jack

Condition:

Set the focus to AUTO.
Point at a light box without a chart inserted at a distance of up to 10cm.

Caution When Adjustment:

1) Place the light box as parallel as possible to the lens surface.
2) The AF noise level adjustment procedure will be completed within thirty seconds after it is selected.

Procedure:

1) Refer to display 4-1.
2) Press **2** key.
   Perform adjustment according to the computer display hereafter.
   See "8. Error Messages" if an error message appears on the computer display.

7.4 VCR Adjustment

Before Starting Adjustment:

- Be sure to perform this adjustment after replacing or initializing the EEPROM and VCA circuit board.
- When an error message appears during adjustment, refer to "8. Error Massage".
- If [ESC] (escape) is pressed, the computer's display returns to MAIN MENU display.
- To complete adjustment, press to [ESC] (escape) key twice to restore the MS-DOS screen and then turn off the camera/recorder and jigs.

1) Start the MAP.
2) Refer to display 1-6.
3) Press **D** key.
4) Refer to display 5-1.
5) Select the number of the required adjustment.

Display & Figs

Display 1-6
MAIN MENU

```
**********************************************
MANUAL ADJUSTMENT PROGRAM
**********************************************
  [A]    DATA MAINTENANCE
  [B]    ADJUSTMENT
  [C]    AUTO FOCUS
  [D]    VCR ADJUSTMENT
  [E]    STABILIZER
  [F]    SPOT NOISE
  [G]    LCD
  [H]    COLOR EVF
  [ESC]  END
   Please select [A] - [H] or [ESC]
```

Display 4-1
AF ADJ. MENU

```
**********************************************
AUTOFOCUS ADJUSTMENT
**********************************************
[1]   ADJUSTMENT OF ZOOM/
          FOCUS TRACKING
[2]   ADJUSTMENT OF
          AF NOISE LEVEL
[ESC] RETURN TO MENU
   Please select [1], [2] or [ESC]
```

Display 5-1
VCR ADJ. MENU

```
**********************************************
VCR ADJUSTMENT
**********************************************
[1]   ADJUSTMENT OF ODC
[2]   ADJUSTMENT OF
          SWITCHING POINT
[ESC] RETURN TO MAIN MENU
   Please select [1], [2] or [ESC]
```

(1) ODC (Over Discharge Control) Adjustment

Purpose:

To set the minimum voltage required to operate the camera/recorder.

Incompleted Phenomenon:

The usable time of the battery becomes short.
The camera/recorder doesn't operate normally.

Equipment/Jig:

DVM
DC Power Supply (0 - 8V)
Blank Tape
ODC DC Cord

Condition:

Connect the camera, LCD monitor and EVF sections.
Supply power (8.0V ± 0.5V) to DC IN via ODC DC cord.
LCD monitor open. (LCD ON)
Cap the lens.
Record mode (Load the brank tape.)

Procedure:

1) Refer to display 5-1.
2) Press **1** key.
3) Refer to display 5-2.
4) Set the voltage of the power supply to 5.8V ± 0.05V.
5) Press any key.
6) Refer to display 5-3.
7) Press any key to return to VCR ADJ. MENU display.

(2) Head Switching Point Adjustment

Note: Be sure to perform this adjustment after replacing the cylinder assembly and VCA circuit board.

Purpose:

To set the switching point of the video heads during playback.

Incompleted Phenomenon:

Vertical jitter occurs.
Switching noise appears across the bottom of the monitor screen.

Equipment/Jig:

Alignment Tape

Condition:

Playback the alignment tape.

Display & Figs

Display 5-1

VCR ADJ. MENU

```
**********************************************
          VCR ADJUSTMENT
**********************************************
[1]   ADJUSTMENT OF ODC
[2]   ADJUSTMENT OF
          SWITCHING POINT
[ESC] RETURN TO MAIN MENU
     Please select [1], [2] or [ESC]
```

Display 5-2

```
« SET UP OF ODC
      ADJUSTMENT STARTED »
PRESET POSITION OF
      'CAMERA/OFF/VCR' SWITCH
'CAMERA' POSITION
SET POWER SOURCE
                    AT 5.8 (+/- 0.05)
```

Display 5-3

```
« SETUP OF ODC
      ADJUSTMENT COMPLETED »
« ODC ADJUSTMENT STARTED »
« ODC ADJUSTMENT COMPLETED »
          PRESS ANY KEY.
```

Procedure:

1) Refer to display 5-1.
2) Press **2** key.
3) Refer to displays 5-4, 5-5 and 5-6.
4) Press any key to return to VCR ADJ. MENU display.
5) Turn the power off.

7.5 Stabilizer Adjustment

Before Starting Adjustment:

- Be sure to perform this adjustment after replacing or initializing the SE circuit board and VCA circuit board (EEPROM).
- This item describes how to rewrite the stabilizer data. The average of the stabilizer data will be written.

Procedure:

1) Start the MAP.
2) Refetr to display 1-6.
3) Press **E** key.
4) Refer to display 6-1.
5) Press **Y** key.
6) Refer to display 6-2.
7) The stabilizer data is rewritten automatically.
8) Press any key to return to MAIN MENU display.

Note: To complete adjustment, press the [ESC] (escape) key twice to restore the MS-DOS screen and then turn off the camera/recorder and jig.

Display & Figs

Display 1-6

MAIN MENU

```
**********************************************
 MANUAL ADJUSTMENT PROGRAM
**********************************************
   [A]    DATA MAINTENANCE
   [B]    ADJUSTMENT
   [C]    AUTO FOCUS
   [D]    VCR ADJUSTMENT
   [E]    STABILIZER
   [F]    SPOT NOISE
   [G]    LCD
   [H]    COLOR EVF
   [ESC]  END
     Please select [A] - [H] or [ESC]
```

Display 5-1

VCR ADJ. MENU

```
**********************************************
          VCR ADJUSTMENT
**********************************************
[1]    ADJUSTMENT OF ODC
[2]    ADJUSTMENT OF
           SWITCHING POINT
[ESC] RETURN TO MAIN MENU
      Please select [1], [2] or [ESC]
```

Display 5-4

```
« ADJUSTMENT OF
          SWITCHING POINT »
PRESET POSITIONS OF
     'CAMERA/OFF/VCR' SWITCH
          'VCR' POSITION
        PRESS ANY KEY
```

Display 5-5

```
  SET UP OF SW POINT
     ADJUSTMENT STARTED.
  SET UP OF SW POINT
     ADJUSTMENT COMPLETED.
SW POINT ADJUSTMENT STARTED.
```

Display 5-6

```
   SW POINT ADJUSTMENT
          DATA CHEACKING.
   FINISHED WRITING DATA.
   ADJUSTMENT FINISHED.
      PRESS ANY KEY.
```

Display 6-1

```
« DATA WRITING »
START TO SEND DATA (Y/N)
```

Display 6-2

```
FINISHED WRITING DATA.
PRESS ANY KEY.
```

7.6 Spot Noise Adjustment

Before Starting Adjustment:

- The spot noise is identified as the fine white noise that appears when the lens cap is attached after the power is turn on.
- Perform this adjustment only for products with which spot noise occurs. (However, there is no problem even if products free from spot noise are adjusted.)
- After replacing the CCD image sensor or VCA circuit board (EEPROM), check whether or not spot noise occurs and then proceed with adjustment.

Porcedure:

1) Start the MAP.
2) Refer to display 1-6.
3) Cap the lens.
4) Connect the color video monitor to video out.
5) Press **F** key.
   Perform adjustment according to the computer display hereafter.
   See "8. Error Messages" if an error message appears on the computer display.

Note: To complete adjustment, press the [ESC] (escape) key twice to restore the MS-DOS screen and then turn off the camera/recorder and jig.

7.7 LCD (LCD Monitor) Adjustment

Before Starting Adjustment:

- Be sure to perform this adjustment after replacing the LCD unit, components on the LCD circuit board or the VCA circuit board (EEPROM), or initializing the EEPROM.
- Picture appears on the LCD monitor when the monitor is open. Perform adjustment with the LCD monitor open (SW773 on the CON circuit board set to OFF).

1) Start the MAP.
2) Refer to display 1-6.
3) Press **G** key.
4) Refer to display 7-1.

Note: To complete adjustment, press the [ESC] (escape) twice to restore the MS-DOS screen and then turn off the camera/recorder and jig.

Display & Figs

Display 1-6

MAIN MENU

```
**********************************************
MANUAL ADJUSTMENT PROGRAM
**********************************************
  [A]    DATA MAINTENANCE
  [B]    ADJUSTMENT
  [C]    AUTO FOCUS
  [D]    VCR ADJUSTMENT
  [E]    STABILIZER
  [F]    SPOT NOISE
  [G]    LCD
  [H]    COLOR EVF
  [ESC]  END
   Please select [A] - [H] or [ESC]
```

Display 7-1

LCD ADJ. MENU

```
**********************************************
          LCD ADJUSTMENT
**********************************************
      [1]    FLICKER
      [ESC]  RETURN TO MENU
      Please select [1] or [ESC]
```

(1) Flicker Adjustment

Purpose:

To minimize flickering on the LCD screen:

Incompleted Phenomenon:

Flickering is present in the picture.

Condition:

Set the CAM/OFF/VIDEO switch to VIDEO position.

Load the alignment tape and it the playback (color bar section).

Procedure:

1) Refer to display 7-1.
2) Press **1** key.
3) Refer to display 7-2.
4) Press the **U** and **D** keys until the picture on the LCD screen is optimal quality.
5) After setting is completed, press the [RETURN (ENTER)] key.

7.8 Color EVF Adjustment [For TYPE965]

Before Starting Adjustment:

- Be sure to perform this adjustment after replacing the color EVF unit, components on the CEVF circuit board or the VCA circuit board (EEPROM), or initializing the EEPROM.
- If the adjustment mode is entered, an image (without luminance or sync signal) will appear in the viewfinder regardless of whether the LCD is open or closed: Perform adjustment in this status.

1) Start the MAP.
2) Refer to display 1-6.
3) Press **H** key.
4) Refer to display 8-1.

Note: To complete adjustment, press the [ESC] (escape) twice to restore the MS-DOS screen and then turn off the camera/recorder and jig.

Display & Figs

Display 1-6

MAIN MENU

```
**********************************************
MANUAL ADJUSTMENT PROGRAM
**********************************************
[A]    DATA MAINTENANCE
[B]    ADJUSTMENT
[C]    AUTO FOCUS
[D]    VCR ADJUSTMENT
[E]    STABILIZER
[F]    SPOT NOISE
[G]    LCD
[H]    COLOR EVF
[ESC]  END
  Please select [A] - [H] or [ESC]
```

Display 7-1

LCD ADJ. MENU

```
**********************************************
LCD ADJUSTMENT
**********************************************
[1]    FLICKER
[ESC]  RETURN TO MENU
Please select [1] or [ESC]
```

Display 7-2

```
**********************************************
FLICKER ADJUSTMENT
**********************************************
[U]        UP
[D]        DOWN
[RETURN] SAVE & RETURN TO MENU
[ESC]      RETURN TO MENU
   Please select [U], [D],
                 [RETURN] or [ESC]
```

Display 8-1

EVF ADJ. MENU

```
**********************************************
EVF ADJUSTMENT
**********************************************
[1]    PLL VCO
[ESC]  RETURN TO MENU
Please select [1] or [ESC]
```

(1) PLL VCO Adjustment

Purpose:

To adjust the VCO free-running frequency.

Incompleted Phenomenon:

Picture cannot be synchronized.

Equipment/Jig:

Frequency Counter

Condition:

Connect a frequency counter to the red cable of DSP output jig. (Use the GND terminal of DSP-R jig power supply (5 V DC) for grounding.)

Procedure:

1) Refer to display 8-1.
2) Press **1** key.
3) Refer to display 8-2.
4) *[For VM-D965LA]*
   Press the **U** and **D** keys to set the frequency to 15.734kHz ± 0.05kHz.
   [For VM-D965LE]
   Press the **U** and **D** keys to set the frequency to 15.625kHz ± 0.05kHz.
5) After setting is completed, press the [RETURN (ENTER)] key.

Display & Figs

Display 8-1

EVF ADJ. MENU

```
**********************************************
          EVF ADJUSTMENT
**********************************************
     [1]     PLL VCO
     [ESC]   RETURN TO MENU
     Please select [1] or [ESC]
```

Display 8-2

```
**********************************************
          PLL VCO ADJUSTMENT
**********************************************
[U]          UP
[D]          DOWN
[RETURN] SAVE & RETURN TO MENU
[ESC]        RETURN TO MENU
     Please select  [U], [D],
                    [RETURN] or [ESC]
```

8. ERROR MESSAGE

8.1 Error Message of Digital Adjustment

ERROR MESSAGE	COUNTERMEASURE
ERROR OCCURRED. IRIS TROUBLE PRESS ANY KEY	· Check whether or not power is supplied. · Check the values of the iris drive circuit. · Defective soldering, damage to pattern, etc. in the above circuit. · Check the iris block and replace it if necessary.
ERROR OCCURRED ON dax ADJUSTMENT PRESS ANY KEY	· Check the values in the hall amp circuit. · Defective soldering, damage to pattern, etc. in the above circuit.
D RANGE OVER. ERROR ON dax ADJUSTMENT PRESS ANY KEY.	· Check the values in the hall amp circuit. · Defective soldering, damage to pattern, etc. in theabove circuit.
ERROR OCCURRED ON da0 and da1 ADJUSTMENT PRESS ANY KEY	· Check the values in the hall amp circuit and its peripheral circuits. · Defective soldering, damage to pattern, etc. in the above circuits.
FILE NOT FOUND !!!! PRESS ANY KEY	· The adjustment program (file) cannot be found. · Check the adjustment floppy disk and replace it if necessary.
FILE OPEN ERROR !!!! PRESS ANY KEY	· The adjustment program (file) does not start. · Check the adjustment floppy disk and replace it if necessary.
ERROR OCCURRED ON C DUTY ADJUSTMENT PRESS ANY KEY	· Check the values of the iris drive circuit. · Defective soldering, damage to pattern, etc. in the above circuit.
ERROR OCCURRED ON FDET ADJUSTMENT PRESS ANY KEY	· Supply power again and re-adjust. · Check the values in the hall amp circuit. · Defective soldering, damage to pattern, etc. in the above circuit.
ERROR OCCURRED. ZOOM DOES NOT WORK PRESS ANY KEY	· Supply power again and re-adjust.
TOO BRIGHT PRESS ANY KEY	· The subject is too bright. · Move the camera further away from the light box.
TOO DARK PRESS ANY KEY	· The subject is too dark. · Check the light box. · Move the camera closer to the light box.
D RANGE OVER ERROR ON HALL AMP IRIS CANNOT OPEN ANY MORE PRESS ANY KEY	· Supply power again and re-adjust. · The subject is too dark. · Check the light box. · Move the camera closer to the light box. · Check the values in the hall amp circuit. · Defective soldering, damage to pattern, etc. in the above circuit.
STAURATION ERROR. TOO BRIGHT PRESS ANY KEY	· The subject is too bright. · Move the camera further away from the light box.
CAN'T ADJUST WHITE BALANCE PLEASE RETRY PRESS ANY KEY	· The subject is too bright or too dark. · Check the light box. · Move the camera closer to or away from the light box. · Supply power again and re-adjust.

8.2 Error Message of VCR Adjustment

ERROR MESSAGE	COUNTERMEASURE
ERROR: SWP_TEST>DAT FILE NOT FOUND!	· The adjustment program cannot be found. · Check the adjustment floppy disk and replace it if necessary.
ERROR: INVALID MODEL PRESS ANY KEY	· A wrong model has been selected. · The adjustment program cannot be found. · Check the adjustment floppy disk and replace it if necessary.
THIS MODEL NEED NOT BE ADJUSTED PRESS ANY KEY	· A wrong model has been selected. · A product that needs analog adjustment is connected.
ADJUSTMENT INCOMPLETED PRESS ANY KEY	· The value set by adjustment defective. · Re-adjust. · Check cylinder. · Check the alignment tape. · Check whether or not the usual operation is done correctly.
RETRY ADJUSTING. PRESS ANY KEY	· Supply power again and re-adjust.
CAMERA IS NOT READY	· Check whether or not power is supplied.
ERROR OCCURRED CAN'T PLAY BACK PRESS ANY KEY	· No playback video. · Check the playback signal.
ERROR OCCURRED NO V.SYNC FOUND PRESS ANY KEY	· Vertical sync loss. · Check the vertical sync signal.
INVALID MODEL PRESS ANY KEY	· A wrong model has been selected. · The adjustment program cannot be found. · Check the adjustment floppy disk and replace it if necessary.
ERROR OCCURRED CAN'T RECORD PRESS ANY KEY	· No video recording. · Check the recording signal.

8.3 Error Message of Autofocus Adjustment

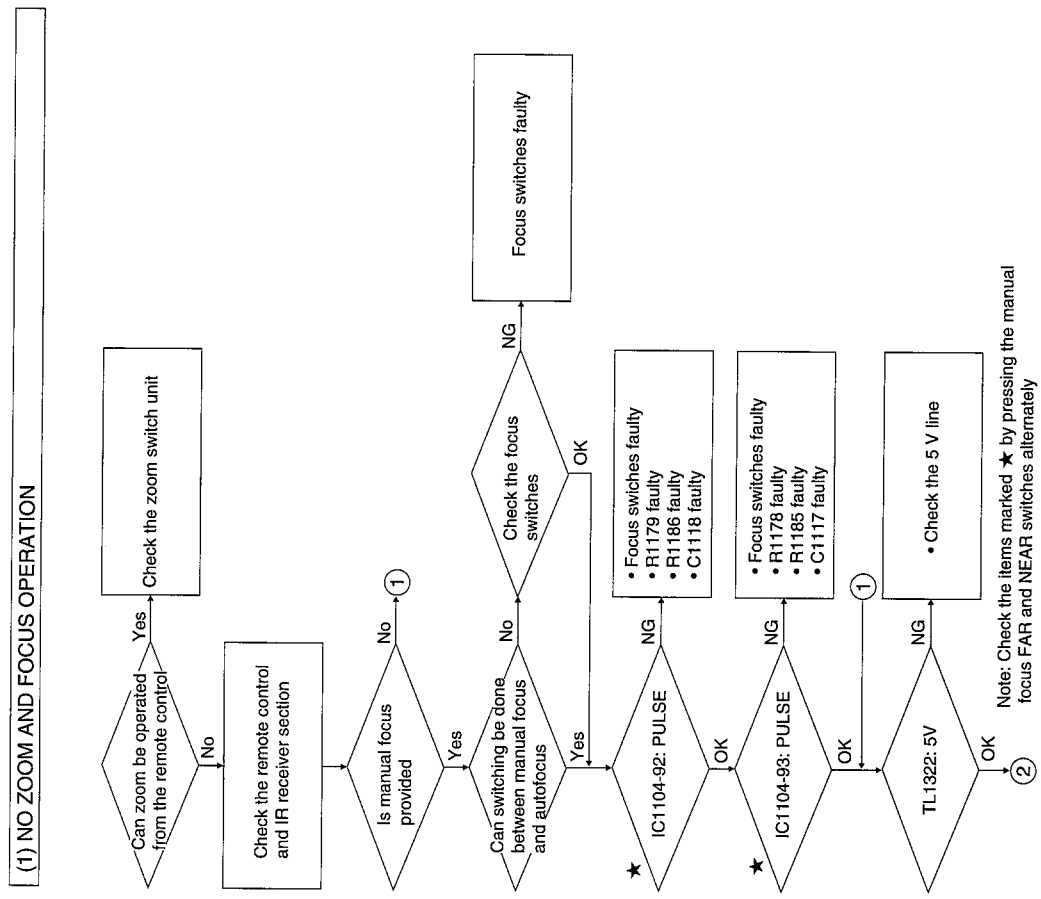
ERROR MESSAGE	COUNTERMEASURE
TIME OUT ERROR ON FOCUS	· Check the conditions of subject. · If this error message appears even when the adjustment is performed 2 or 3 times, the autofocus circuit system is defective. · Refer to (1) of TROUBLESHOOTING OF AUTOFOCUS.
TIME OUT ERROR ON ZOOM	· If this error message appears even when the adjustment is performed 2 or 3 times, the autofocus circuit system is defective. · Refer to (2) of TROUBLESHOOTING OF AUTOFOCUS.
TIME OUT ERROR ON AF STEP	· Check the conditions of subject. · If this error message appears even when the adjustment is performed 2 or 3 times, the autofocus circuit system is defective. · Refer to (1) of TROUBLESHOOTING OF AUTOFOCUS.
AF LIMIT OVER	· Check the conditions of subject. · If this error message appears even when the adjustment is performed 2 or 3 times, the autofocus circuit system is defective. · Refer to (2) of TROUBLESHOOTING OF AUTOFOCUS.
AF ERROR	· If this error message appears even when the adjustment is performed 2 or 3 times, the autofocus circuit system is defective. · Refer to (1) of TROUBLESHOOTING OF AUTOFOCUS.
TOO DARK	·Insufficient lighting. Check the subject.

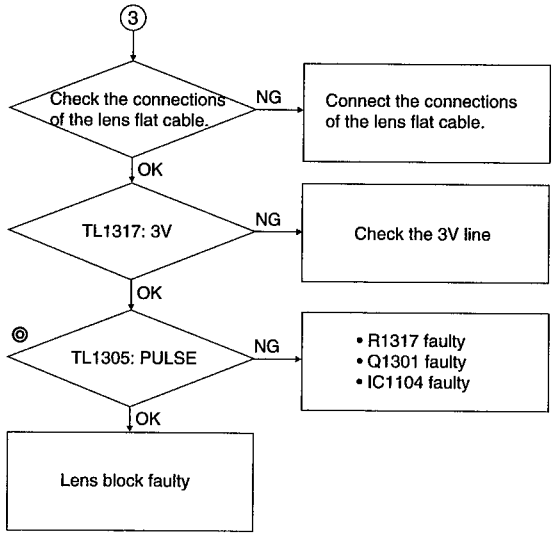
8.4 Error Message of Stabilizer Adjustment

ERROR MESSAGE	COUNTERMEASURE
THIS MODEL NEED NOT BE ADJUSTED PRESS ANY KEY.	· Adjustment is to be started for models that do not need adjustment. · Model selection is incorrect. · Initial setting for each model is incorrect. · Make sure of model selection and initial setting for each model. (If they are incorrect, readjust all adjustment items.)
INVALID MODEL PRESS ANY KEY	· Adjustment is to be started for models that do not need adjustment (or adjustment is inappropriate). · Model selection is incorrect. · Initial setting for each model is incorrect. · Make sure of model selection and initial setting for each model. (If they are incorrect, readjust all adjustment items.)

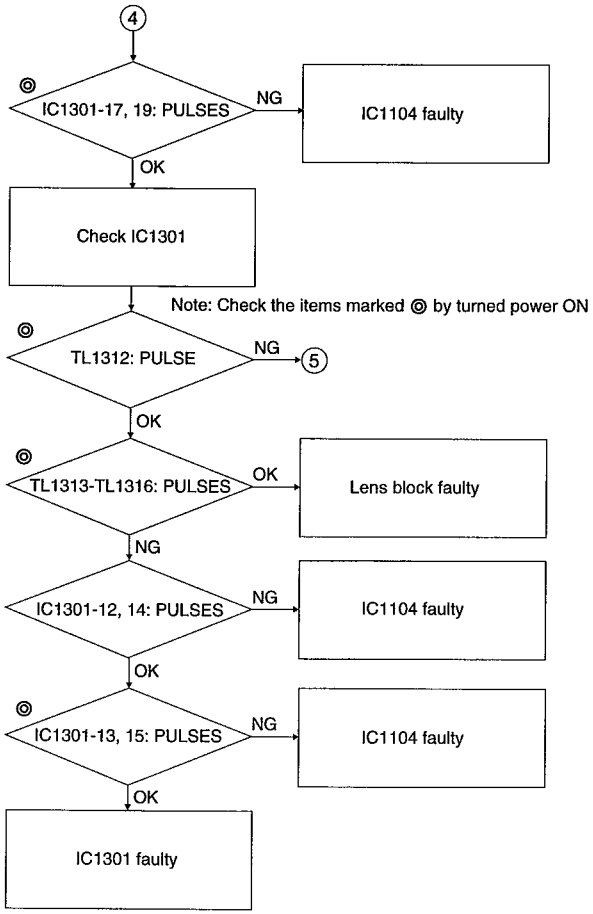
8.5 Error Message of Spot Noise Adjustment

ERROR MESSAGE	COUNTERMEASURE
ERROR!! SPOT NOISE COMPENSATION IS STOPPED BY INITIAL DATA. PLEASE CHECK THE EEPROM. PRESS ANY KEY.	· Spot noise compensation is inhibited by the data in the EEPROM. · Turn the power on again. · Data in the EEPROM is defective. (Initialize it.) · Check the EEPROM,and if necessary,replace it.
ERROR!! THRESHOLD DATA ERROR. PLEASE CHECK THE EEPROM. PRESS ANY KEY.	· Turn the power on again. · Data in the EEPROM is defective. (Initialize it.) · Check the EEPROM,and if necessary,replace it.
ERROR!! THE SPOT NOISE IS TOO MANY. CAN'T COMPENSATE ANY MORE. PRESS ANY KEY.	· The amount of spot noise that can be compensated reaches the limit. · Turn the power on again. · Check the CCD image sensor,and if necessary,replace it.

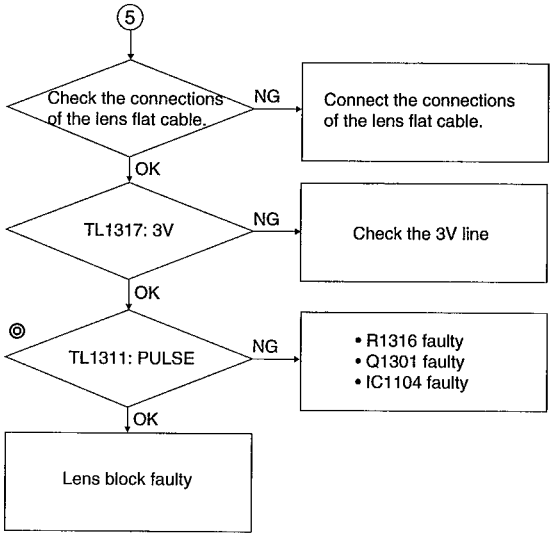

(1) NO ZOOM AND FOCUS OPERATION
Can zoom be operated from the remote control
Yes
Check the zoom switch unit
No
Check the remote control and IR receiver section
Is manual focus provided
No
1
Yes
Can switching be done between manual focus and autofocus
No
Check the focus switches
NG
Focus switches faulty
OK
Yes
★
IC1104-92: PULSE
NG
• Focus swiches faulty
• R1179 faulty
• R1186 faulty
• C1118 faulty
OK
★
IC1104-93: PULSE
NG
• Focus switches faulty
• R1178 faulty
• R1185 faulty
• C1117 faulty
OK
1
TL1322: 5V
NG
• Check the 5 V line
OK
2
Note: Check the items marked ★ by pressing the manual focus FAR and NEAR switches alternately
2
Check IC1104 and EEPROM
Note: Check the items marked ◎ by turned power ON
◎
TL1306: PULSE
NG
3
OK
◎
TL1301-TL1304: PULSES
OK
Lens block faulty
NG
IC1301-3: 3V
NG
Check the 3V line
OK
IC1301-4, 11, 23: 5V
NG
Check the 5V line
OK
TL1325: 12V
NG
• C1302 faulty
• C1303 faulty
• C1304 faulty
OK
IC1301-16, 18: PULSES
NG
IC1104 faulty
OK
4



Note: Check the items marked ◎ by turned power ON

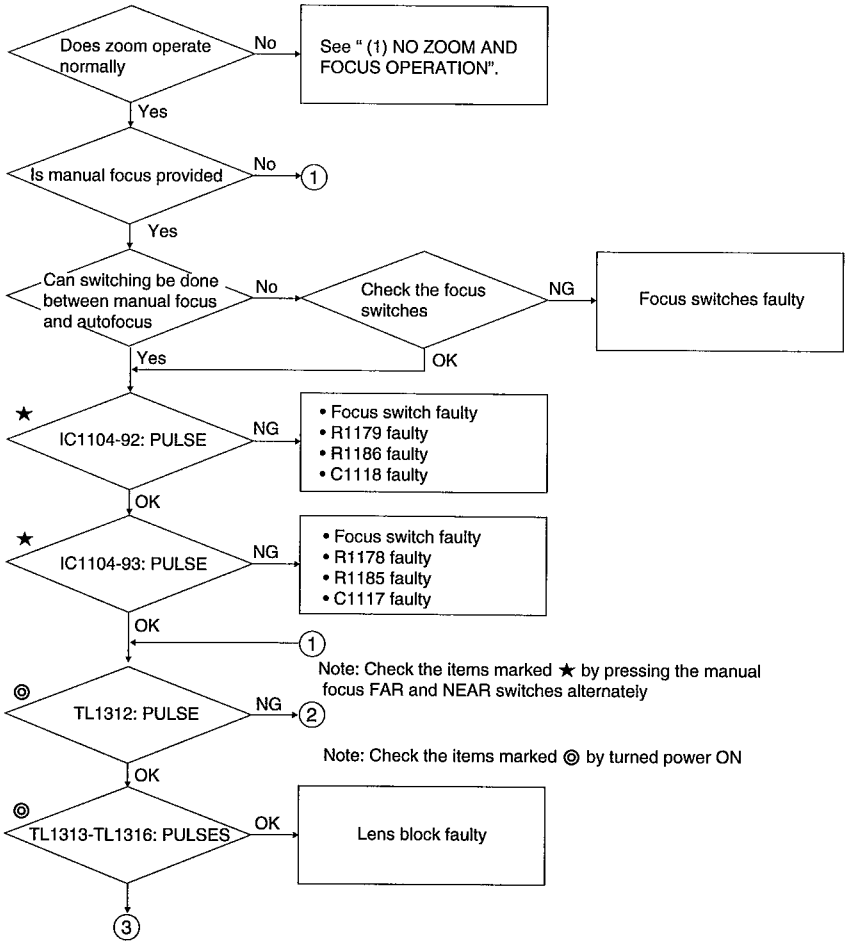


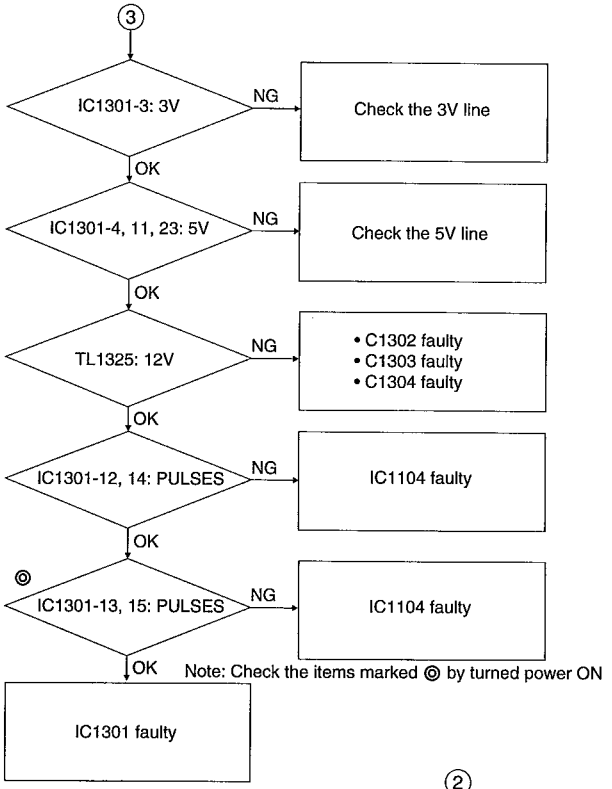
Note: Check the items marked ◎ by turned power ON

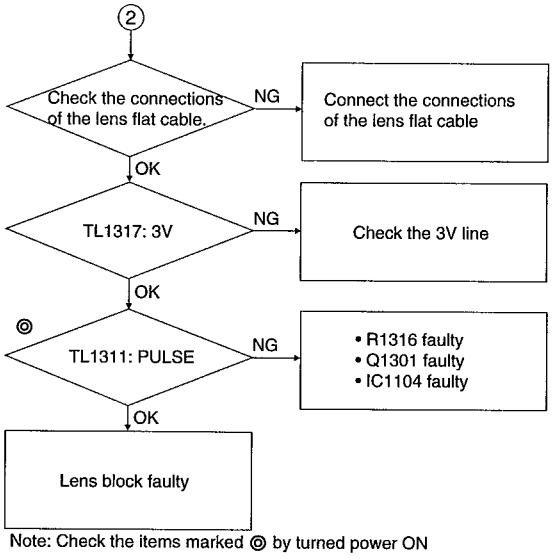


Note: Check the items marked ◎ by turned power ON

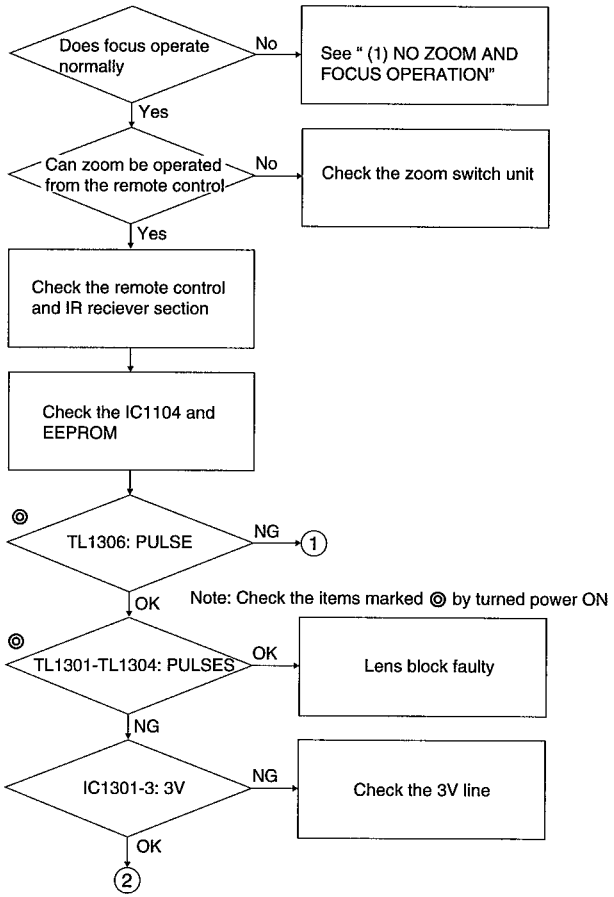
(2) NO FOCUS LENS OPERATION

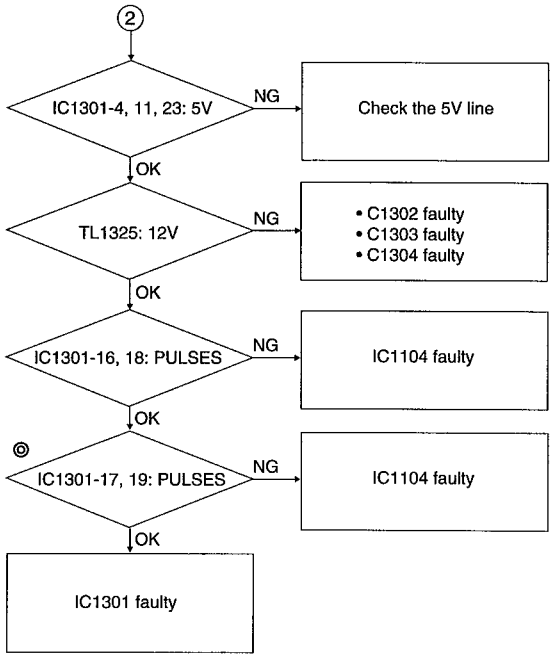




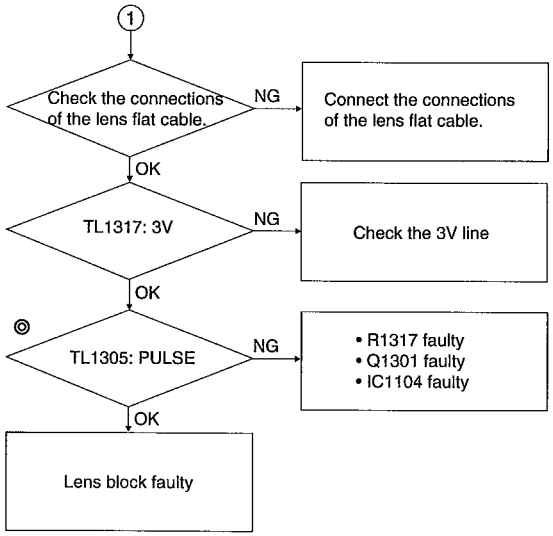


(3) NO ZOOM OPERATION



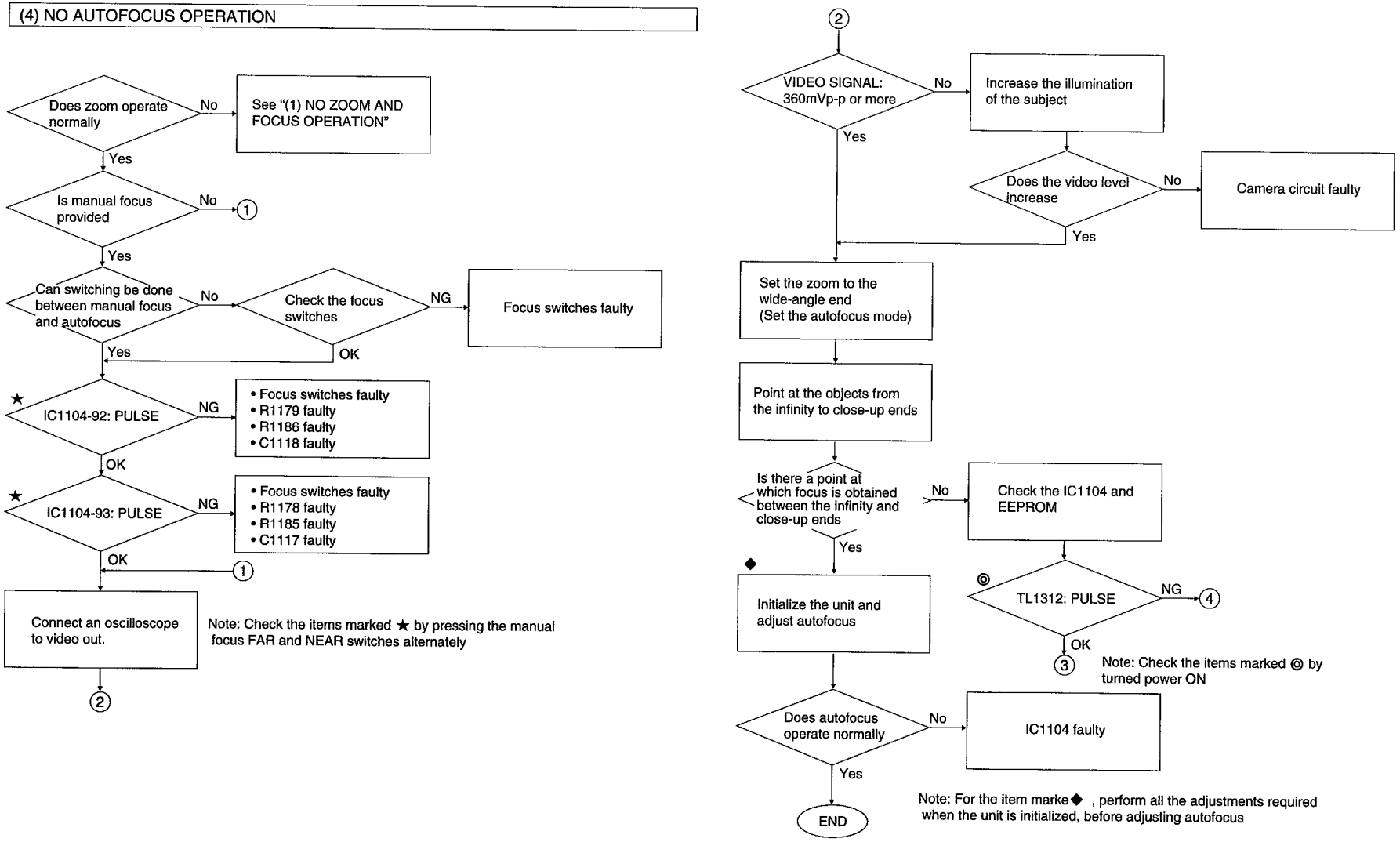


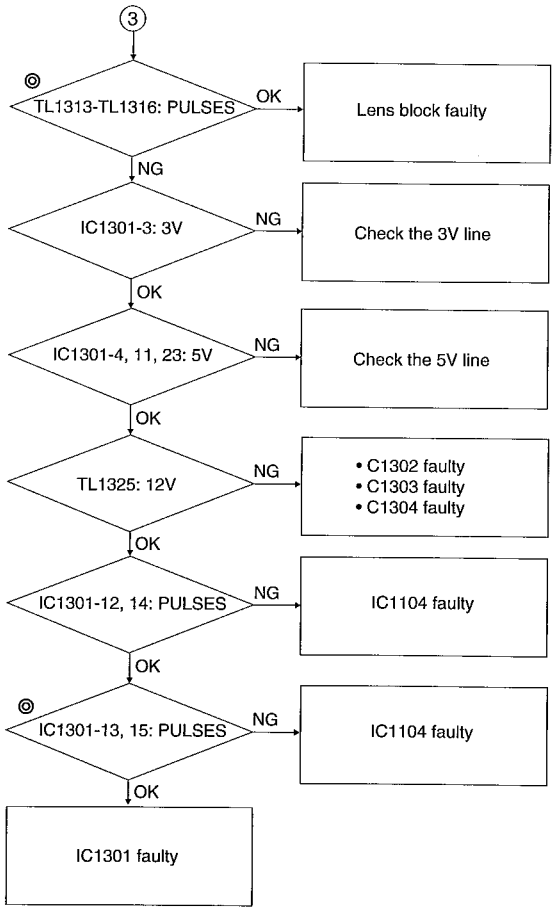
Note: Check the items marked ◎ by turned power ON



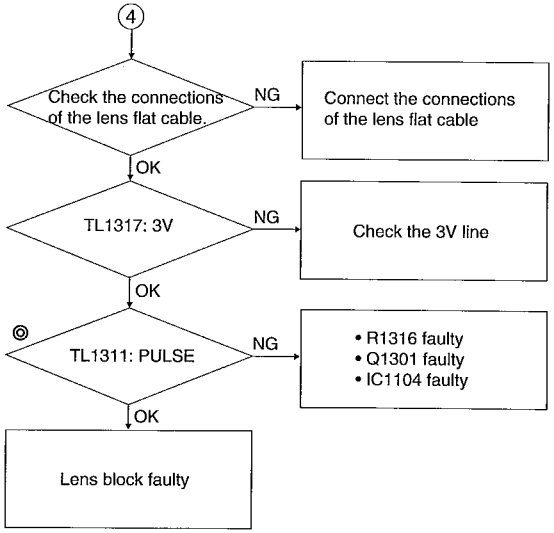
Note: Check the items marked ◎ by turned power ON

(4) NO AUTOFOCUS OPERATION



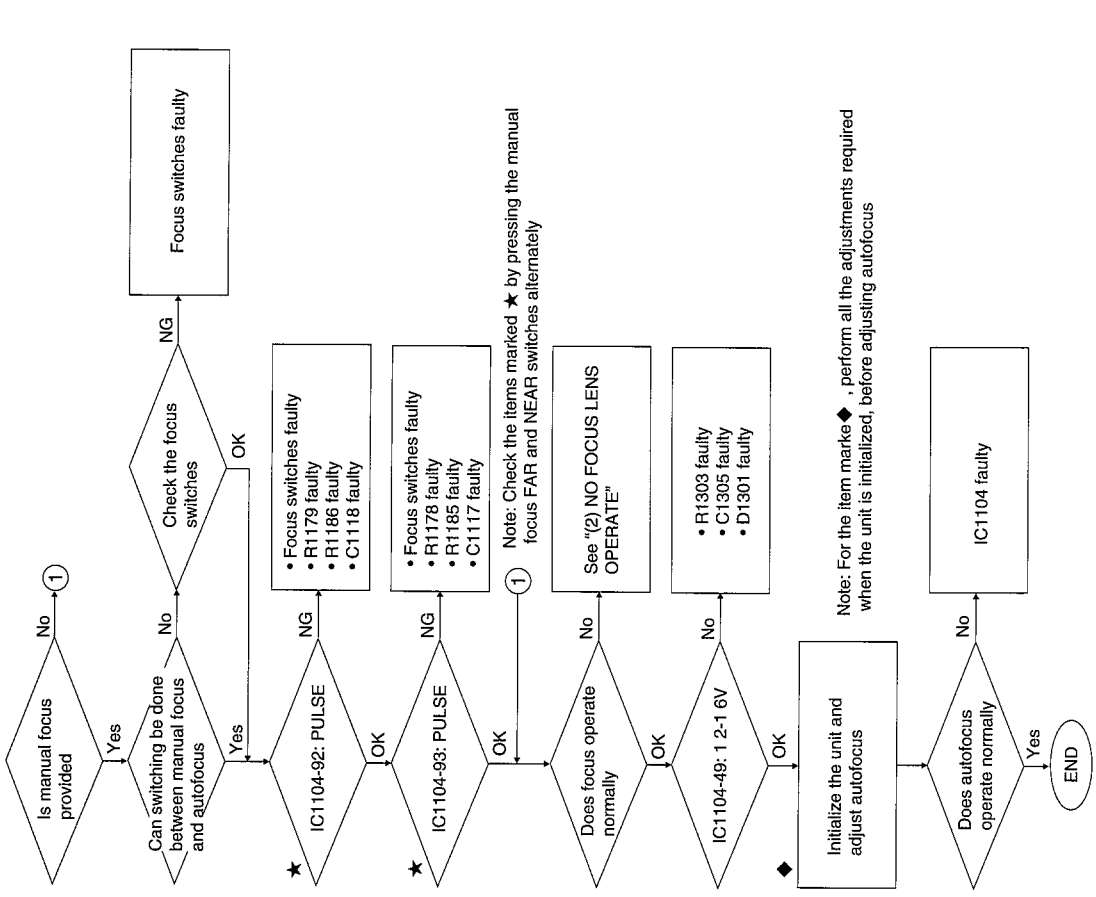


Note: Check the items marked ◎ by turned power ON

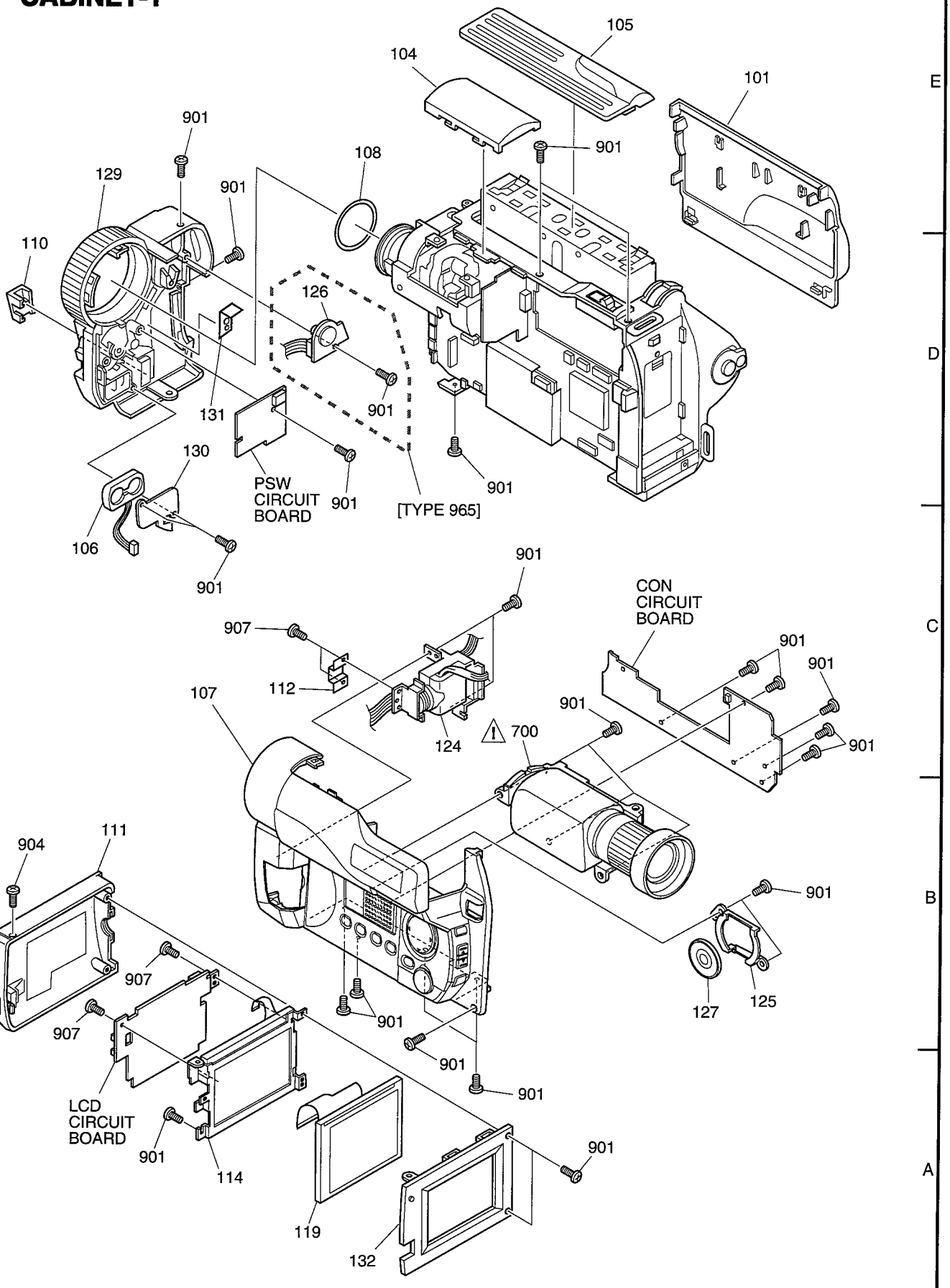


Note: Check the items marked ◎ by turned power ON

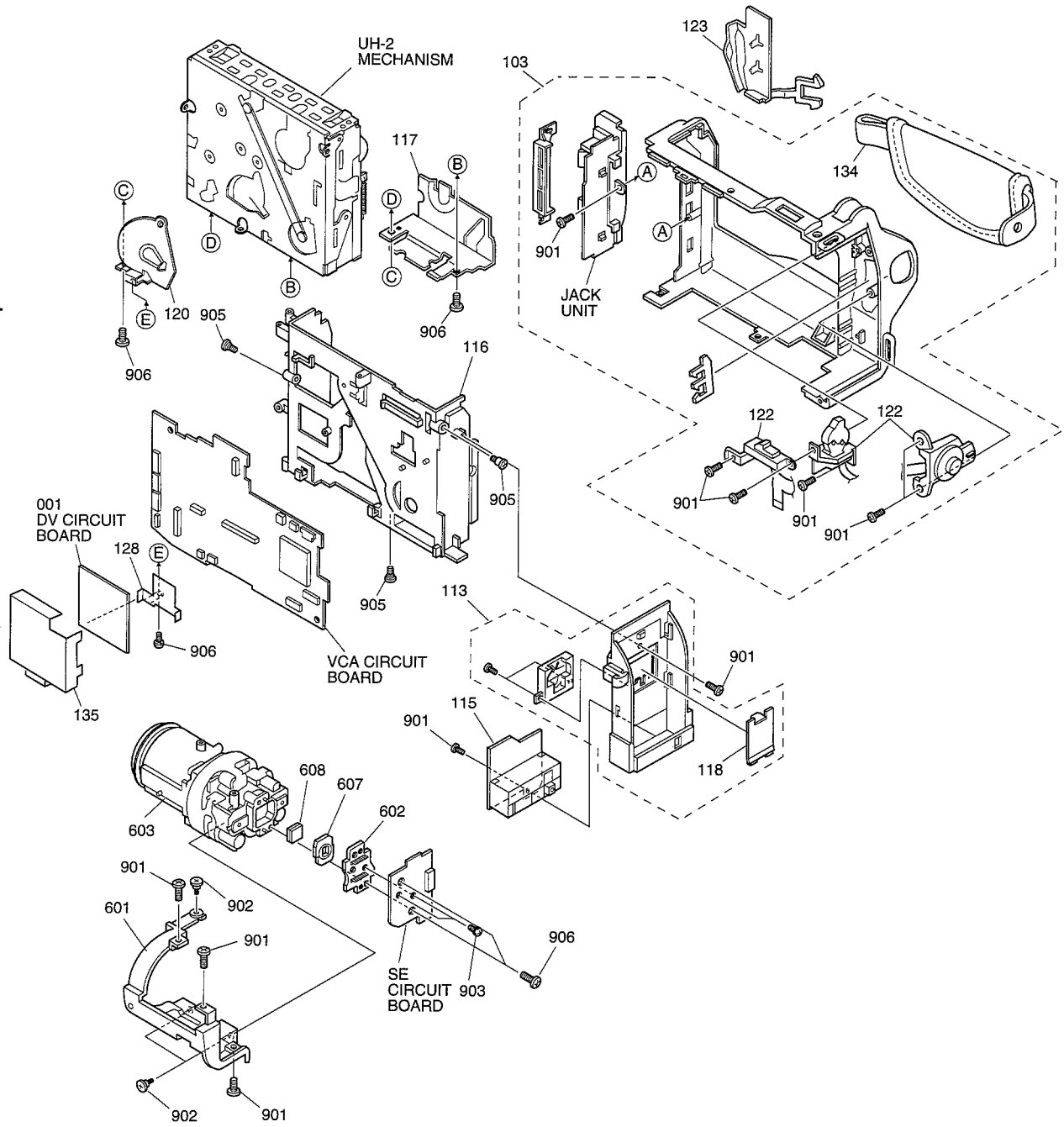
(5) SUBJECT IS GREATLY OUT-OF-FOCUS WHEN ZOOMED



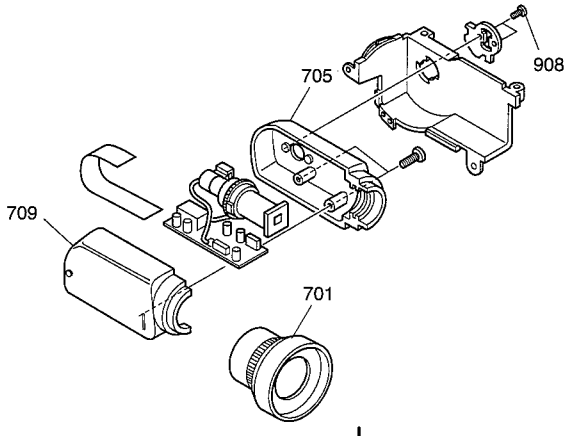
CABINET-1


105
104
101
901
108
129
110
126
131
130
PSW
CIRCUIT
BOARD
[TYPE 965]
106
907
112
107
124
700
CON
CIRCUIT
BOARD
904
111
127
125
LCD
CIRCUIT
BOARD
114
119
132

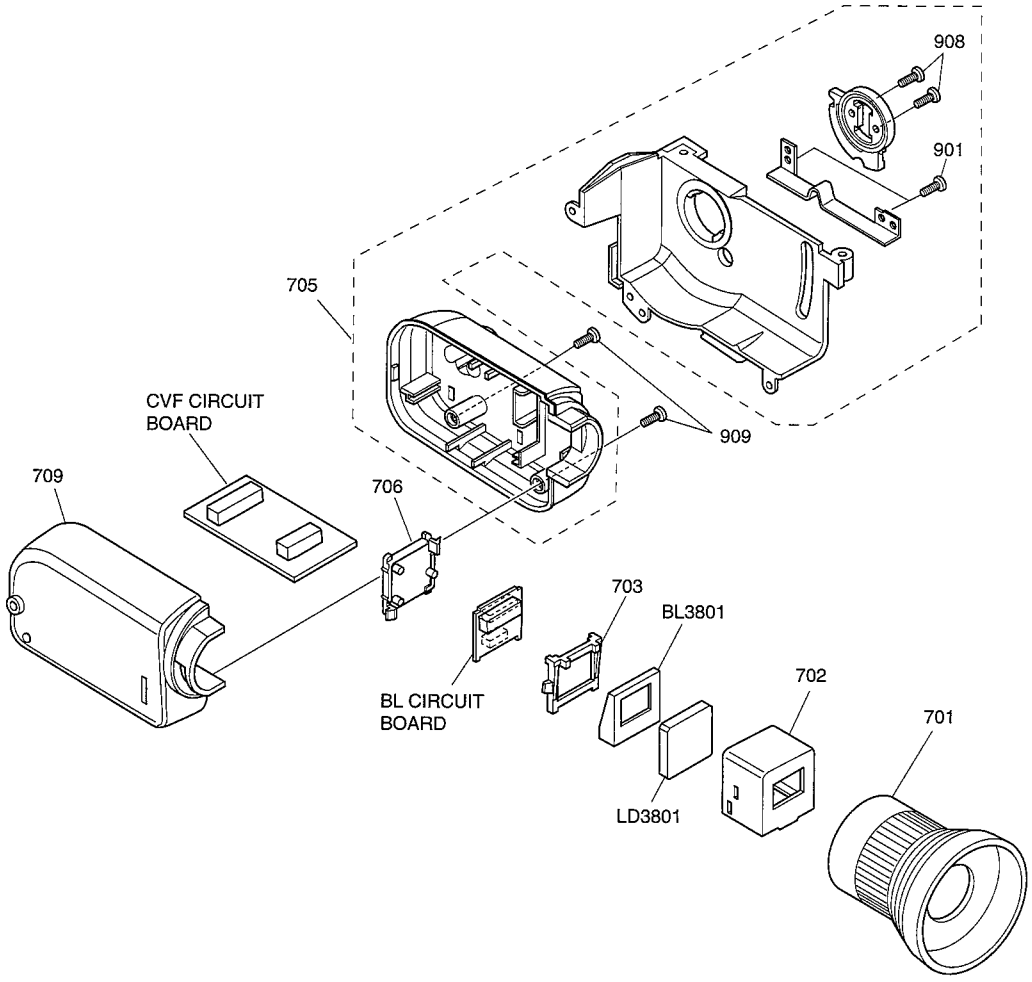
CABINET-2



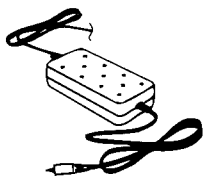
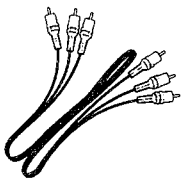
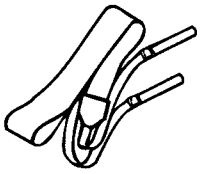
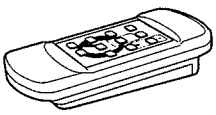
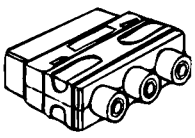
ELECTRONIC VIEWFINDER (EVF) [TYPE 865]

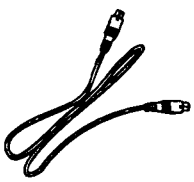
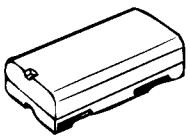


ELECTRONIC VIEWFINDER (EVF) [TYPE 965]

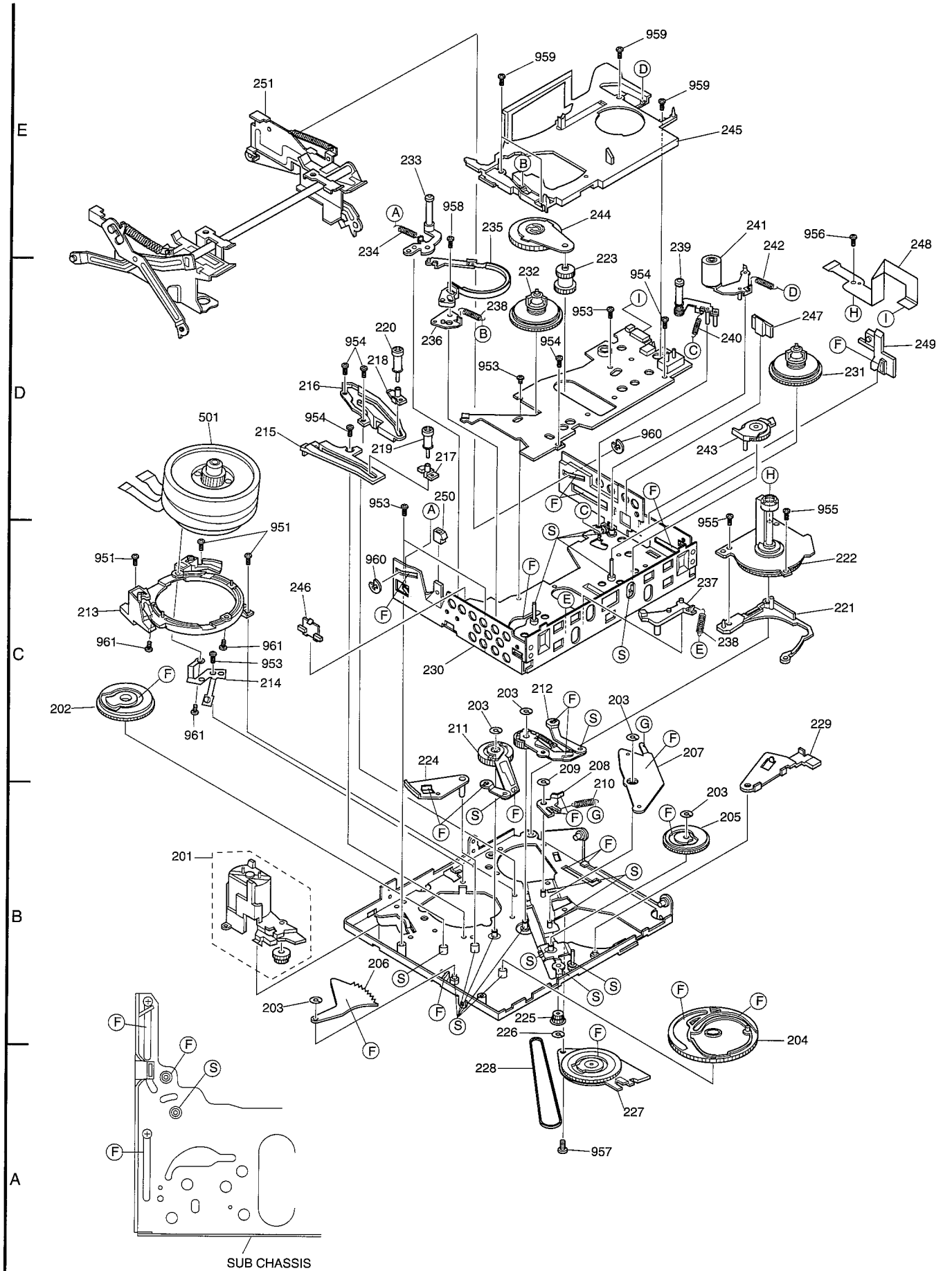


ACCESSORIES

⚠ 802	803	804	805	806
				

807	⚠ Battery Pack
	

UH MECHANISM



CHAPTER 5 REPLACEMENT PARTS LIST

1. MECHANICAL PARTS LIST

SYMBOL NO	P-NO	DESCRIPTION
		MECHANISM SECTION
001	JP29831	PWB ASSY DV
101	QD18892	LID,CASSETTE
103	QD19886	CASE,SIDE(R) [TYPE 965]
103	QD19887	CASE,SIDE(R) [TYPE 865]
104	PH19912	COVER,LENS
105	QD18912	COVER,TOP
106	GH10353	MICROPHONE
107	QD20052	CASE,SIDE(L)
108	NX11244	RING(O)
110	QX14082	COVER
111	QD19237	CASE,LCD(U) [TYPE 965]
111	QD19238	CASE,LCD(U) [TYPE 865]
112	MN15232	SPACER
113	QD18701	COVER,REAR
114	DT10351	LIGHT,BACK
115	FH10652	TERMINAL UNIT
116	NT11721	FRAME,MECHA
117	MD12622	SHIELD,MECHA
118	QX13981	COVER,BATTERY
119	DB10721	DISPLAY,LIQUID CRYSTAL
120	MD13671	PLATE,SHIELD
122	FH10661	SWITCH(TW/PW) [TYPE 865]
122	FH10722	SWITCH(TW/PW) [TYPE 965]
123	QX14043	COVER,JACK
124	NX19225	FLUCLUM AS
125	NA17111	BRACKET
126	DP10332	LIGHT,DC [TYPE 965]
127	GK10252	SPEAKER
128	MD13661	PLATE,SHIELD
129	QD20205	CASE,FRONT [TYPE 965]
129	QD20206	CASE,FRONT [TYPE 865]
130	NX20091	PLATE,MIC
131	MN15471	SHEET,IR
132	QD18874	CASE,LCD(B)
134	PV10351	STRAP,HAND
135	MD13641	CASE,SHIELD
201	KX19871	HOLDER,LOADING MOTOR
202	KX21991	GEAR,CAM(A)
203	7787731	WASHER
204	KX22122	GEAR,CAM(B)
205	KX20271	GEAR,CAM(C)
206	KX19802	ARM,DRIVE
207	KX19812	LEVER,DRIVE
208	KX19821	PLATE,PRESSURE
209	7787735	WASHER
210	KL12652	SPRING
211	KX19705	LINK(L)
212	KX19657	LINK(R)
213	KX21591	BASE,CYLINDER ASSY
214	FU10311	BRUSH
215	KX20551	GUIDE RAIL(I)
216	KX20561	GUIDE RAIL(O)
217	KX20573	BASE,GUIDE ROLLER(I)
218	KX20582	BASE,GUIDE ROLLER(O)
219	KF13072	GUIDE(I)
220	KF13112	ROLLER
221	KX20293	BASE,CM
222	GP10665	MOTOR,CAPSTAN
223	KF12911	GEAR,CENTER
224	KX21601	PLATE
225	KF12901	GEAR,PULLY
226	7787733	WASHER
227	KX22012	SWITCH,MODE
228	KK10331	BELT,TIMING
229	KX21411	ARM,R
230	UE13524	CHASSIS,SUB
231	KH10353	REEL DISK,TAKE-UP
232	KH10363	REEL,DISK SUPPLY
233	KX20303	ARM,TENSION
234	KL12661	SPRING,TENSION
235	KX20202	BAND,TENSION
236	KX19841	BASE,B
237	KX19851	BRAKE
238	KL12671	SPRING
239	KX20495	ARM,OHD
240	KL12681	SPRING
241	KX20354	ARM,PR
242	KL12691	SPRING
243	KG10281	GEAR,BRAKE
244	KG10302	IDLER ASSY
245	KX20483	COVER,IDLER
246	KX20461	GUIDE,LIGHT(L)
247	KX20472	GUIDE,LIGHT(R)
248	EK11132	FLEXIBLE,MECHA
249	KX20242	HOLDER,EJECT
250	KX19791	LID OPENER
251	KX19609	CASSETTE HOLDER ASSY
501	HX10253	CYLINDER ASSY (CY-53C3-F)
601	NT11702	FRAME,LENS
602	UE14256	CCD IMAGE SENSOR
603	KQ10752	LENS ASSY
607	NX11252	RUBBER
608	DT10312	CRYSTAL
⚠700	UX10664	EVF AS [TYPE 865]
⚠700	UX10681	EVF AS(COLOR) [TYPE 965]
701	QD19771	PEICE,EYE [TYPE 865]
701	QD19773	PEICE,EYE [TYPE 965]
702	NT11792	HOLDER,LCD [TYPE 965]
703	NX19461	PLATE,BL [TYPE 965]
705	QD19203	CASE,EVF(R) [TYPE 865]
705	QD20211	CASE,EVF(R) [TYPE 965]
706	NX19471	COVER,BL [TYPE 965]
709	QD19213	CASE,EVF(L) [TYPE 865]
709	QD20171	CASE,EVF(L) [TYPE 965]
901	7775946	SCREW (2X6)
902	MJ10221	SCREW
903	7775945	SCREW(2X5)
904	7775964	SCREW(2X4)
905	7773891	SCREW
906	8650103	SCREW(2X3)
907	MK11701	SCREW(2X4S)
908	7775948	SCREW(2X8)
909	8619066	SCREW(1.7X6) [TYPE 965]
951	8700268	SCREW(1.7X3)
953	7775911	SCREW(1.4X1.6)
954	7775913	SCREW (1.4X2.0)
955	8712970	SCREW(1.4X4)
956	8712974	SCREW(1.4X6)
957	8712968	SCREW(1.4X3P)
958	MK11551	SCREW(1.7X3.0)
959	8714026	SCREW (1.4X3.5)
960	7778394	E RING
961	8711105	SCREW(2X5)
		ACCESSARIES
⚠802	TS15053	ADAPTOR,AC(VM-ACE5E)[EXCEPT FOR(AU),(UK)]

SYMBOL NO	P-NO	DESCRIPTION
⚠802	TS15055	ADAPTOR,AC(VM-ACE5E(AU))[FOR (AU)]
⚠802	TS15059	ADAPTOR,AC(VM-ACE5E(UK))[FOR (UK)]
803	EW12143	CORD,3PIN
804	TS14621	STRAP,SHOULDER
805	HL11231	REMOTE HAMD SET
806	TS12981	AV PLUG ADAPTER[EXCEPT FOR (AU)]
807	EW12152	CORD,S(Y/C)

SYMBOL NO	P-NO	DESCRIPTION

2. ELECTRICAL PARTS LIST

SYMBOL NO	P-NO	DESCRIPTION
		CAMERA & VCR SECTION
C0001	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0004	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0109	AA01101R	CERAMIC CHIP 1UF+-10% 25V
C0111	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0114	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0115	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0116	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0117	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0118	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0119	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0120	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0121	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0122	0893117	CERAMIC CHIP 22PF+-5% 50V
C0123	0893133	CERAMIC CHIP 330PF+-5% 50V
C0124	0893118	CERAMIC CHIP 27PF+-0.5% 50V
C0125	0893122	CERAMIC CHIP 47PF+-5% 50V
C0126	0893114	CERAMIC CHIP 12PF+-5% 50V
C0128	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0129	0893132	CERAMIC CHIP 270PF+-5% 50V
C0130	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0131	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0132	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0133	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0134	0893111	CERAMIC CHIP 8PF+-0.5% 50V
C0135	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C0136	0893126	CERAMIC CHIP 100PF+-5% 50V
C0137	0893123	CERAMIC CHIP 56PF+-5% 50V
C0138	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0139	0893121	CERAMIC CHIP 39PF+-5% 50V
C0140	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0144	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0145	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0147	0893121	CERAMIC CHIP 39PF+-5% 50V
C0156	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0201	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0202	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0203	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0205	AD10488R	CHIP CAPACITOR 100UF+-20% 4V
C0206	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0208	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0209	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0211	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0212	AA00931R	CERAMIC CAPACITOR 1UF+-10% 10V
C0213	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0215	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0217	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0218	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C0219	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0220	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0221	0893111	CERAMIC CHIP 8PF+-0.5% 50V
C0222	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0223	0806167	ELECTROLYTIC 47UF 4V
C0224	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0225	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0226	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0227	0893111	CERAMIC CHIP 8PF+-0.5% 50V
C0228	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0229	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0230	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0231	AA00931R	CERAMIC CAPACITOR 1UF+-10% 10V
C0233	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0240	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0242	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0243	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0245	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0246	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0247	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0248	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0252	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0253	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0260	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0261	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0262	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0263	AA00951R	CERAMIC CAPACITOR 1.0UF+-10% 16V
C0265	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0266	AA00951R	CERAMIC CAPACITOR 1.0UF+-10% 16V
C0267	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0268	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0269	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0270	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C0271	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0272	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C0277	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0278	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0279	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0280	0893117	CERAMIC CHIP 22PF+-5% 50V
C0281	0893117	CERAMIC CHIP 22PF+-5% 50V
C0282	0893117	CERAMIC CHIP 22PF+-5% 50V
C0290	AA00951R	CERAMIC CAPACITOR 1.0UF+-10% 16V
C0307	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0311	AA00931R	CERAMIC CAPACITOR 1UF+-10% 10V
C0315	AA01111R	CERAMIC CHIP 1UF 6.3V
C0316	AA00412R	CERAMIC CHIP 10UF+-80-20% 16V
C0350	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C0352	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0353	AA00422R	CERAMIC CHIP 10UF 16V
C0354	AA00335R	CHIP CERAMIC 1.0UF+80-20% 25V
C0355	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C0356	0893093	CERAMIC CHIP 2.2UF+80-20% 16V
C0357	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C0358	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C0359	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0360	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C0361	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C0362	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0363	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0364	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C0365	AA00698R	CERAMIC CHIP 2.2UF+-10% 16V
C0366	0806174	ELECTROLYTIC 100UF 6.3V
C0370	AA00698R	CERAMIC CHIP 2.2UF+-10% 16V
C0401	0806168	ELECTROLYTIC 47UF 6.3V
C0402	0806168	ELECTROLYTIC 47UF 6.3V
C0403	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0405	AA01111R	CERAMIC CHIP 1UF 6.3V
C0408	AD10257R	CHIP CAPACITOR 4.7UF+-20% 6.3V
C0409	AD10266R	ELECTROLYTIC 22UF 4V
C0410	AA00931R	CERAMIC CAPACITOR 1.0UF+-10% 10V
C0411	0893213	CERAMIC CHIP 2200PF+-10% 50V
C0414	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0415	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0416	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0417	AD10257R	CHIP CAPACITOR 4.7UF+-20% 6.3V
C0418	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0419	AD10263R	ELECTROLYTIC 10UF 10V
C0420	AD10257R	CHIP CAPACITOR 4.7UF+-20% 6.3V
C0421	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0422	0893219	CERAMIC CHIP 0.0068UF+-10% 50V

SYMBOL NO	P-NO	DESCRIPTION
C0423	AA00934R	CERAMIC CAPACITOR 2.2UF+-10% 10V
C0424	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0425L	0893219	CERAMIC CHIP 0.0068UF+-10% 50V
C0425R	0893219	CERAMIC CHIP 0.0068UF+-10% 50V
C0426L	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0426R	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0427L	0893219	CERAMIC CHIP 0.0068UF+-10% 50V
C0427R	0893219	CERAMIC CHIP 0.0068UF+-10% 50V
C0428	0806168	ELECTROLYTIC 47UF 6.3V
C0429	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0430L	AA01111R	CERAMIC CHIP 1UF 6.3V
C0430R	AA01111R	CERAMIC CHIP 1UF 6.3V
C0432	AA01111R	CERAMIC CHIP 1UF 6.3V
C0433	AD10483R	CHIP CAPACITOR 33UF+-20% 6.3V
C0434	AD10268R	CHIP CAPACITOR 33UF+-20% 6V
C0435	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0436	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0437	AA01111R	CERAMIC CHIP 1UF 6.3V
C0438	AA01111R	CERAMIC CHIP 1UF 6.3V
C0439	AA01111R	CERAMIC CHIP 1UF 6.3V
C0441L	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0441R	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0442L	0893135	CERAMIC CHIP 470PF+-5% 50V
C0442R	0893135	CERAMIC CHIP 470PF+-5% 50V
C0443L	AA01111R	CERAMIC CHIP 1UF 6.3V
C0443R	AA01111R	CERAMIC CHIP 1UF 6.3V
C0444L	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0444R	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0445L	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0445R	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0446	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0447	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0448	AA00934R	CERAMIC CAPACITOR 2.2UF+-10% 10V
C0449L	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0449R	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0450L	0893213	CERAMIC CHIP 2200PF+-5% 50V
C0450R	0893213	CERAMIC CHIP 2200PF+-5% 50V
C0451L	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0451R	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0452	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0453L	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0453R	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0454L	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0454R	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0455	AD10276R	ELECTROLYTIC 33UF 10V
C0456	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0457L	AA01111R	CERAMIC CHIP 1UF 6.3V
C0457R	AA01111R	CERAMIC CHIP 1UF 6.3V
C0458	AA01111R	CERAMIC CHIP 1UF 6.3V
C0460L	AA01111R	CERAMIC CHIP 1UF 6.3V
C0460R	AA01111R	CERAMIC CHIP 1UF 6.3V
C0463	AD10263R	ELECTROLYTIC 10UF 10V
C0465L	AD10257R	CHIP CAPACITOR 4.7UF+-20% 6.3V
C0465R	AD10257R	CHIP CAPACITOR 4.7UF+-20% 6.3V
C0466L	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0466R	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0498	0893119	CERAMIC CHIP 33PF+-5% 50V
C0499	0893119	CERAMIC CHIP 33PF+-5% 50V
C0501	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0502	0893119	CERAMIC CHIP 33PF+-5% 50V
C0503	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0504	0893119	CERAMIC CHIP 33PF+-5% 50V
C0505	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0507	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0508	0893217	CERAMIC CHIP 4700PF+-10% 50V

SYMBOL NO	P-NO	DESCRIPTION
C0509	0893126	CERAMIC CHIP 100PF+-5% 50V
C0510	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0511	0893183	CHIP CERAMIC 0.018UF+-10% 16V
C0513	0893227	CERAMIC CHIP 0.22UF+80-20% 16V
C0514	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0516	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0517	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0518	0893129	CERAMIC CHIP 180PF+-5% 50V
C0519	0893133	CERAMIC CHIP 330PF+-5% 50V
C0520	0893129	CERAMIC CHIP 180PF+-5% 50V
C0521	0893133	CERAMIC CHIP 330PF+-5% 50V
C0522	0893129	CERAMIC CHIP 180PF+-5% 50V
C0523	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0524	0893133	CERAMIC CHIP 330PF+-5% 50V
C0525	0893129	CERAMIC CHIP 180PF+-5% 50V
C0527	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0528	AA00412R	CERAMIC CHIP 10UF+-80-20% 16V
C0529	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0534	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0535	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0538	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0540	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0541	AA00335R	CHIP CERAMIC 1.0UF+80-20% 25V
C0542	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0543	AA00335R	CHIP CERAMIC 1.0UF+80-20% 25V
C0544	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0545	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0546	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0547	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0548	AA00422R	CERAMIC CHIP 10UF 16V
C0549	AA00422R	CERAMIC CHIP 10UF 16V
C0550	AA00412R	CERAMIC CHIP 10UF+-80-20% 16V
C0551	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0552	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0559	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0562	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0565	0893248	CHIP CERAMIC 0.33UF+80-20% 16V
C0566	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0567	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0577	0893058	CERAMIC CHIP 0.33UF+80-20% 16V
C0578	0806174	ELECTROLYTIC 100UF 6.3V
C0582	AA00951R	CERAMIC CAPACITOR 1.0UF+-10% 16V
C0584	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0585	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0586	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0588	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0589	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0590	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0591	AA00335R	CHIP CERAMIC 1.0UF+80-20% 25V
C0592	AA00373R	CERAMIC CAPACITOR 4.7UF +-10% 10V
C0593	AA00412R	CERAMIC CHIP 10UF+-80-20% 16V
C0594	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0595	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0596	AA00422R	CERAMIC CHIP 10UF 16V
C0597	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0598	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0631	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0632	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0633	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0635	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0636	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0637	0893219	CERAMIC CHIP 0.0068UF+-10% 50V
C0638	0893219	CERAMIC CHIP 0.0068UF+-10% 50V
C0641	0893135	CERAMIC CHIP 470PF+-5% 50V
C0642	AD10263R	ELECTROLYTIC 10UF 10V

SYMBOL NO	P-NO	DESCRIPTION
C0643	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0644	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C0645	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0647	AA01132R	CERAMIC CAPACITOR 0.22UF+-10% 6.3V
C0648	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0649	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0650	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0651	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0652	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0654	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0655	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0656	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0657	AA01121R	CERAMIC CHIP 0.47UF+-10% 10V
C0658	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0659	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0660	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0663	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0671	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0672	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C0673	0893213	CERAMIC CHIP 2200PF+-10% 50V
C0691	0893198	CERAMIC CHIP 0.027UF+-10% 25V
C0692	0893245	CERAMIC CAPACITOR 0.015UF+-10% 50V
C0693	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0694	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0695	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0696	0893219	CERAMIC CHIP 0.0068UF+-10% 50V
C0701	0806168	ELECTROLYTIC 47UF 6.3V
C0703	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0736	0806174	ELECTROLYTIC 100UF 6.3V
C0737	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0757	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C0902	AD10266R	ELECTROLYTIC 22UF 4V
C0904	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C0905	0806173	ELECTROLYTIC 100UF 4V
C0906	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0907	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0908	0806167	ELECTROLYTIC 47UF 4V
C0909	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C0910	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0911	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C0912	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C0913	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0914	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0915	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0916	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0917	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0918	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0919	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0920	AA01101R	CERAMIC CAPACITOR 10UF+-20% 10V
C0921	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0922	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0923	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0924	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0925	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0926	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0927	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0928	0893117	CERAMIC CHIP 22PF+-5% 50V
C0929	0893117	CERAMIC CHIP 22PF+-5% 50V
C0930	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C0931	0893106	CERAMIC CHIP 4.0PF
C0942	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C1001	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1002	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1003	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1004	0893211	CERAMIC CHIP 1500PF+-10% 50V

SYMBOL NO	P-NO	DESCRIPTION
C1005	0893062	CERAMIC CHIP 1UF+80-20% 16V
C1006	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1008	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C1009	0893062	CERAMIC CHIP 1UF+80-20% 16V
C1011	0893062	CERAMIC CHIP 1UF+80-20% 16V
C1012	0893062	CERAMIC CHIP 1UF+80-20% 16V
C1112	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C1113	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1114	0893208	CERAMIC CHIP 1000PF+-10% 50V
C1115	0893208	CERAMIC CHIP 1000PF+-10% 50V
C1116	0893208	CERAMIC CHIP 1000PF+-10% 50V
C1117	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C1118	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C1155	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1159	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C1161	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C1163	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1164	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C1165	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1167	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1168	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1169	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C1170	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C1201	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1202	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1203	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1204	0893132	CERAMIC CHIP 270PF+-5% 50V
C1205	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1206	0893178	CERAMIC CAPACITOR 0.082UF+-10% 16V
C1207	AA01132R	CERAMIC CHIP 0.22UF+80-20% 25V
C1208	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C1209	0893133	CERAMIC CHIP 330PF+-5% 50V
C1210	0893133	CERAMIC CHIP 330PF+-5% 50V
C1211	0893133	CERAMIC CHIP 330PF+-5% 50V
C1212	AA01101R	CERAMIC CAPACITOR 1UF+-20% 10V
C1213	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1301	0806174	ELECTROLYTIC 100UF 6.3V
C1302	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1305	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1306	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1311	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1403	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C1404	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C1405	0806156	ELECTROLYTIC 22UF 4V
C1406	0806156	ELECTROLYTIC 22UF 4V
C1407	0893194	CERAMIC CHIP 0.012UF+-10% 25V
C1408	0893194	CERAMIC CHIP 0.012UF+-10% 25V
C1409	0893194	CERAMIC CHIP 0.012UF+-10% 25V
C1410	0893194	CERAMIC CHIP 0.012UF+-10% 25V
C1411	AA00373R	CERAMIC CAPACITOR 4.7UF+-10% 10V
C1412	AA00373R	CERAMIC CAPACITOR 4.7UF+-10% 10V
C1413	0893214	CERAMIC CHIP 2700PF+-10% 50V
C1414	0893214	CERAMIC CHIP 2700PF+-10% 50V
C1415	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C1417	0806156	ELECTROLYTIC 22UF 4V
C3801	AA00422R	CERAMIC CHIP 10UF 16V
C3803	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C3804	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C3805	0806117	ELECTROLYTIC 3.3UF 16V
C3806	0893191	CERAMIC CHIP 6800PF+-10% 25V
C3807	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C3808	AA01136R	CERAMIC CAPACITOR 0.47UF+-10% 6.3V
C3809	AA01136R	CERAMIC CAPACITOR 0.47UF+-10% 6.3V
C3810	AA01136R	CERAMIC CAPACITOR 0.47UF+-10% 6.3V
C3811	AA01136R	CERAMIC CAPACITOR 0.47UF+-10% 6.3V

SYMBOL NO	P-NO	DESCRIPTION
C3812	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C3813	AA00698R	CERAMIC CHIP 2.2UF 16V
C3814	AA00751R	CERAMIC CHIP 10UF+-10% 6.3V
C3819	AA01111R	CERAMIC CHIP 1UF 6.3V
C3820	AA01141R	CHIP CAPACITOR 0.1UF+-10% 16V
C3821	AA01111R	CERAMIC CHIP 1UF 6.3V
C3822	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C3823	AA01134R	CERAMIC CAPACITOR 0.33UF+-10% 6.3V
C3824	AA00422R	CERAMIC CHIP 10UF 16V
C3827	AA00966R	CHIP CAPACITOR 4.7UF+-20% 6.3V
C3829	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C3830	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C3831	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C3832	0893122	CERAMIC CHIP 47PF+-5% 50V
C3902	AA01111R	CERAMIC CHIP 1UF 6.3V
C3903	AA00951R	CERAMIC CAPACITOR 1.0UF+-10% 16V
C3904	AA00698R	CERAMIC CHIP 2.2UF+-10% 16V
C3990	AA01111R	CERAMIC CHIP 1UF 6.3V
C3991	AA01111R	CERAMIC CHIP 1UF 6.3V
C3992	AA01111R	CERAMIC CHIP 1UF 6.3V
C5314	0893099	CERAMIC CHIP 0.47UF+-10% 16V
C5319	AA00951R	CERAMIC CAPACITOR 1.0UF+-10% 16V
C5320	AD10274R	ELECTROLYTIC 6.8UF 20V
C5501	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C5502	0893093	CERAMIC CHIP 2.2UF+80-20% 16V
C5503	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C5504	0893184	CERAMIC CHIP 0.022UF+-10% 16V
C5505	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5507	AA00373R	CERAMIC CAPACITOR 4.7UF+-10% 10V
C5509	0893116	CERAMIC CHIP 18PF+-5% 50V
C5510	0893118	CERAMIC CHIP 27PF+-5% 50V
C5511	AD10276R	ELECTROLYTIC 33UF 10V
C5512	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C5513	AF10115R	CHIP CAPASITOR 0.018UF+-5% 50V
C5524	AA10647R	CERAMIC CAPACITOR 12PF+-5% 2KV
R0001	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0003	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0006	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0007	0103978	CHIP RESISTOR 3.3OHM+-5% 1/8W
R0008	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0009	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0010	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0011	AQ01007R	CHIP RESISTOR 1KOHM+-0.5% 1/16W
R0012	AQ01021R	CHIP RESISTOR 10KOHM+-0.5% 1/16W
R0013	AQ01024R	CHIP RESISTOR 18KOHM+-0.5% 1/16W
R0014	AQ01007R	CHIP RESISTOR 1KOHM+-0.5% 1/16W
R0017	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0018	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0020	AQ10405R	CHIP RESISTOR 0.10OHM 1/4W
R0024	AQ01031R	CHIP RESISTOR 56KOHM+-0.5% 1/16W
R0025	0105217	CHIP RESISTOR 150KOHM+-0.5% 1/16W
R0100	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0101	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0102	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R0103	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R0104	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R0105	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R0106	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R0109	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0116	0790076	CHIP RESISTOR 820KOHM+-5% 1/16W
R0120	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R0121	0790056	CHIP RESISTOR 27KOHM+-5% 1/16W
R0122	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R0123	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0124	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0125	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0126	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0127	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0128	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0129	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0130	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0131	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0132	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0133	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0140	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0141	0790035	CHIP RESISTOR 680 OHM+-5% 1/16W
R0144	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0145	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0146	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0147	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0148	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0149	0790027	CHIP RESISTOR 180 OHM+-5% 1/16W
R0150	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0151	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0152	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0153	0790031	CHIP RESISTOR 330 OHM+-5% 1/16W
R0154	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0155	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0156	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0157	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0158	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R0159	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0160	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0161	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R0162	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0163	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0164	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0165	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0166	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0201	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R0203	0790029	CHIP RESISTOR 270 OHM+-5% 1/16W
R0206	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0207	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0209	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0210	0790035	CHIP RESISTOR 680 OHM+-5% 1/16W
R0212	BM00141R	FILTER
R0213	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0214	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0215	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0216	0790026	CHIP RESISTOR 150 OHM+-5% 1/16W
R0218	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0219	0790027	CHIP RESISTOR 180 OHM+-5% 1/16W
R0220	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0221	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0222	0790027	CHIP RESISTOR 180 OHM+-5% 1/16W
R0223	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0224	AQ00222R	CHIP RESISTOR 11KOHM+-5% 1/16W
R0226	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0227	AQ00201R	CHIP RESISTOR 1.8KOHM+-1% 1/16W
R0228	AQ00205R	CHIP RESISTOR 2.7KOHM+-1% 1/16W
R0229	0790026	CHIP RESISTOR 150 OHM+-5% 1/16W
R0230	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0231	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0232	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0233	0790056	CHIP RESISTOR 27KOHM+-5% 1/16W
R0238	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0239	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0240	0790056	CHIP RESISTOR 27KOHM+-5% 1/16W
R0248	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0250	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0258	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0259	0790029	CHIP RESISTOR 270 OHM+-5% 1/16W
R0266	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0267	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0274	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0276	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0277	0790019	CHIP RESISTOR 47 OHM+-5% 1/16W
R0283	AQ00231R	CHIP RESISTOR 24KOHM+-1% 1/16W
R0285	0790012	CHIP RESISTOR 12 OHM+-5% 1/16
R0286	0790012	CHIP RESISTOR 12 OHM+-5% 1/16
R0301	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0302	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0304	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0311	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0351	AQ00179R	CHIP RESISTOR 300 OHM+-1% 1/16W
R0353	AQ00179R	CHIP RESISTOR 300 OHM+-1% 1/16W
R0355	AQ00179R	CHIP RESISTOR 300 OHM+-1% 1/16W
R0356	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0357	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0358	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0359	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0360	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0361	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0362	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0366	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0371	AQ00024R	CHIP RESISTOR 100 OHM+-5% 1/16W
R0372	AQ00024R	CHIP RESISTOR 100 OHM+-5% 1/16W
R0374	AQ00024R	CHIP RESISTOR 100 OHM+-5% 1/16W
R0375	AQ00024R	CHIP RESISTOR 100 OHM+-5% 1/16W
R0387	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R0388	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R0401	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0402	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0403L	AQ00218R	CHIP RESISTOR 8.2KOHM+-1% 1/16W
R0403R	AQ00218R	CHIP RESISTOR 8.2KOHM+-1% 1/16W
R0406	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0416	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0417L	AQ00203R	CHIP RESISTOR 2.2KOHM+-1% 1/16W
R0417R	AQ00203R	CHIP RESISTOR 2.2KOHM+-1% 1/16W
R0420L	AQ00194R	CHIP RESISTOR 1KOHM+-1% 1/16W
R0420R	AQ00194R	CHIP RESISTOR 1KOHM+-1% 1/16W
R0421	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0423L	AQ00207R	CHIP RESISTOR 3.3KOHM+-1% 1/16W
R0423R	AQ00207R	CHIP RESISTOR 3.3KOHM+-1% 1/16W
R0424	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0429	0790003	CHIP RESISTOR 2.7 OHM+-5% 1/16W
R0430	0790003	CHIP RESISTOR 2.7 OHM+-5% 1/16W
R0431	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R0432	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R0433	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0434	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0435L	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0435R	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0436L	0790071	CHIP RESISTOR 330KOHM+-5% 1/16W
R0436R	0790071	CHIP RESISTOR 330KOHM+-5% 1/16W
R0437L	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0437R	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0438L	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R0438R	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R0439L	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0439R	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0440L	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0440R	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0441L	AQ00229R	CHIP RESISTOR 22KOHM+-1% 1/16W
R0441R	AQ00229R	CHIP RESISTOR 22KOHM+-1% 1/16W
R0442L	AQ00225R	CHIP RESISTOR 15KOHM+-1% 1/16W
R0442R	AQ00225R	CHIP RESISTOR 15KOHM+-1% 1/16W
R0443	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0444	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0445L	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0445R	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0446L	AQ00194R	CHIP RESISTOR 1KOHM+-1% 1/16W
R0446R	AQ00194R	CHIP RESISTOR 1KOHM+-1% 1/16W
R0447L	AQ00247R	CHIP RESISTOR 100KOHM+-1% 1/16W
R0447R	AQ00247R	CHIP RESISTOR 100KOHM+-1% 1/16W
R0448L	AQ00205R	CHIP RESISTOR 2.7KOHM+-1% 1/16W
R0448R	AQ00205R	CHIP RESISTOR 2.7KOHM+-1% 1/16W
R0449L	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0449R	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0453	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0457	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0458L	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0458R	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0459L	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0459R	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0460L	AQ00227R	CHIP RESISTOR 18KOHM+-1% 1/16W
R0460R	AQ00227R	CHIP RESISTOR 18KOHM+-1% 1/16W
R0463L	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0463R	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0466L	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0466R	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0469L	AQ00219R	CHIP RESISTOR 9.1KOHM+-1% 1/16W
R0469R	AQ00219R	CHIP RESISTOR 9.1KOHM+-1% 1/16W
R0470L	AQ00227R	CHIP RESISTOR 18KOHM+-1% 1/16W
R0470R	AQ00227R	CHIP RESISTOR 18KOHM+-1% 1/16W
R0501	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0502	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0504	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0505	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0506	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0507	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0508	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0510	AQ00238R	CHIP RESISTOR 47KOHM+-1% 1/16W
R0511	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0512	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0513	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0514	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0516	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0517	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0518	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0519	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0522	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0525	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0529	AQ01016R	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0531	AQ01003R	CHIP RESISTOR 470OHM+-0.5% 1/16W
R0532	AQ01016R	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0533	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0534	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R0539	AQ01021R	CHIP RESISTOR 10KOHM+-0.5% 1/16W
R0540	AQ01005R	CHIP RESISTOR 680OHM+-0.5% 1/16W
R0541	AQ01016R	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0545	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0546	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R0549	AQ00264R	CHIP RESISTOR 430KOHM+-10% 1/16W
R0550	AQ10274R	CHIP RESISTOR 46.4KOHM+-0.5% 1/16W
R0551	AQ01005R	CHIP RESISTOR 680OHM+-0.5% 1/16W
R0552	AQ01016R	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0553	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0554	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0556	AQ01005R	CHIP RESISTOR 680OHM+-0.5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0557	AQ01004R	CHIP RESISTOR 560OHM+-0.5% 1/16W
R0558	AQ01016R	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0561	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0562	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0566	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0567	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0568	AQ01016R	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0569	AQ00213R	CHIP RESISTOR 5.1KOHM+-1% 1/16W
R0580	BM00141R	FILTER
R0581	BM00141R	FILTER
R0585	0790073	CHIP RESISTOR 470KOHM+-5% 1/16W
R0597	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0598	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0599	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0640	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0641	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0642	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0643	0105815	CHIP RESISTOR 0.47 OHM+-10% 1/4W
R0644	0105815	CHIP RESISTOR 0.47 OHM+-10% 1/4W
R0645	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0646	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0647	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0648	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0652	0105703	CHIP RESISTOR 1.3KOHM+-5% 1/16W
R0653	0105703	CHIP RESISTOR 1.3KOHM+-5% 1/16W
R0654	0105703	CHIP RESISTOR 1.3KOHM+-5% 1/16W
R0655	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0662	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0664	0790002	CHIP RESISTOR 2.2 OHM+-5% 1/16W
R0665	0790002	CHIP RESISTOR 2.2 OHM+-5% 1/16W
R0666	0790002	CHIP RESISTOR 2.2 OHM+-5% 1/16W
R0667	0790058	CHIP RESISTOR 39KOHM+-5% 1/16W
R0668	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0671	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R0672	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0681	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0682	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0691	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0692	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0693	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0694	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0695	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0696	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0697	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0698	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0701	0790058	CHIP RESISTOR 39KOHM+-5% 1/16W
R0702	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0734	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0761	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0762	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0763	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0764	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0765	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0766	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0767	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0771	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0772	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R0773	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0774	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R0775	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0776	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0777	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R0778	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0901	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0902	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0903	0790068	CHIP RESISTOR 220KOHM+-5% 1/16W
R0904	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0905	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0906	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0907	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0908	0105217	CHIP RESISTOR 150KOHM+-0.5% 1/16W
R0909	AQ01031R	CHIP RESISTOR 56KOHM+-0.5% 1/16W
R0910	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0912	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0913	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0914	AQ00051R	CHIP RESISTOR 10KOHM+-5% 1/16W
R0915	AQ00051R	CHIP RESISTOR 10KOHM+-5% 1/16W
R0916	AQ00051R	CHIP RESISTOR 10KOHM+-5% 1/16W
R0917	AQ00059R	CHIP RESISTOR 47KOHM+-5% 1/16W
R0918	AQ00077R	CHIP RESISTOR 1MOHM+-5% 1/16W
R0920	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0921	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0922	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0923	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0924	0790066	CHIP RESISTOR 150KOHM+-5% 1/16W
R0925	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0926	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0928	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R0933	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0934	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0935	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0936	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0938	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0939	0790001	JUMPER CHIP RESISTOR
R0940	0790001	JUMPER CHIP RESISTOR
R0941	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0942	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0943	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0945	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0947	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0948	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0949	AQ00234R	CHIP RESISTOR 33KOHM+-1% 1/16W
R0952	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0953	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0954	AQ00245R	CHIP RESISTOR 82KOHM+-1% 1/16W
R0955	AQ00227R	CHIP RESISTOR 18KOHM+-1% 1/16W
R0956	AQ00234R	CHIP RESISTOR 33KOHM+-1% 1/16W
R0957	AQ00247R	CHIP RESISTOR 100KOHM+-1% 1/16W
R0958	AQ00236R	CHIP RESISTOR 39KOHM+-1% 1/16W
R0959	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0960	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0962	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0963	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0966	0790067	CHIP RESISTOR 180KOHM+-5% 1/16W
R0967	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0969	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0970	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0971	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0974	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0976	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0977	0790017	CHIP RESISTOR 33 OHM+-5% 1/16W
R0978	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0979	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0980	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0981	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0982	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0983	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0984	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0985	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0992	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R1001	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1002	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R1003	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R1006	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1009	0103823	CHIP RESISTOR 22OHM+-5% 0.1W
R1123	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1124	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R1125	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1126	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1127	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1136	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1141	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R1142	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1143	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1152	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1153	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R1154	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1155	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1156	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R1157	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R1158	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R1161	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1164	0790062	CHIP RESISTOR 68KOHM+-5% 1/16W
R1165	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1170	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1171	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1172	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1173	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1174	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1175	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1178	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1179	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1185	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1186	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1188	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1189	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1190	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1191	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1201	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R1202	0790069	CHIP RESISTOR 0.27MOHM+-5% 1/16W
R1203	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1204	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1205	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1206	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R1207	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1208	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R1209	0790067	CHIP RESISTOR 180KOHM+-5% 1/16W
R1210	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1211	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R1212	0790067	CHIP RESISTOR 180KOHM+-5% 1/16W
R1213	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1214	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1215	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1216	AQ00231R	CHIP RESISTOR 24KOHM+-1% 1/16W
R1218	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1220	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R1221	0790029	CHIP RESISTOR 270 OHM+-5% 1/16W
R1222	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R1223	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R1225	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1226	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1227	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1303	AQ00214R	CHIP RESISTOR 5.6KOHM+-1% 1/16W
R1312	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R1313	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R1316	0790027	CHIP RESISTOR 180OHM+-5% 1/16W
R1317	0790027	CHIP RESISTOR 180OHM+-5% 1/16W
R1403	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1404	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1405	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R1406	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R1407	0790072	CHIP RESISTOR 390KOHM+-5% 1/16W
R1408	0790072	CHIP RESISTOR 390KOHM+-5% 1/16W
R1409	AQ00236R	CHIP RESISTOR 39KOHM+-1% 1/16W
R1410	AQ00236R	CHIP RESISTOR 39KOHM+-1% 1/16W
R1411	AQ00269R	CHIP RESISTOR 680KOHM+-1% 0.63W
R1412	AQ00269R	CHIP RESISTOR 680KOHM+-1% 0.63W
R1413	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R1414	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R1416	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1424	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1425	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R3801	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R3802	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R3803	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R3805	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R3809	AQ00212R	CHIP RESISTOR 4.7KOHM+-1% 1/16W
R3810	AQ00238R	CHIP RESISTOR 47KOHM+-1% 1/16W
R3811	AQ00238R	CHIP RESISTOR 47KOHM+-1% 1/16W
R3812	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R3813	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R3814	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R3815	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R3816	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R3817	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R3830	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R3841	0790011	CHIP RESISTOR 10 OHM+-5% 1/16W
R3842	0790011	CHIP RESISTOR 10 OHM+-5% 1/16W
R3843	0790011	CHIP RESISTOR 10 OHM+-5% 1/16W
R3851	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R3861	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R3862	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R3863	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R3864	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R3866	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R3867	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R3868	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R3869	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R3871	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R3872	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R3904	0790019	CHIP RESISTOR 47 OHM+-5% 1/16W
R3905	0790019	CHIP RESISTOR 47 OHM+-5% 1/16W
R3911	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R3912	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R5307	AQ00198R	CHIP RESISTOR 1.5KOHM+-1% 1/16W
R5308	AQ00212R	CHIP RESISTOR 4.7KOHM+-1% 1/16W
R5330	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R5332	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R5334	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R5339	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R5340	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R5502	AQ00249R	CHIP RESISTOR 120KOHM+-1% 1/16W
R5503	AQ00232R	CHIP RESISTOR 27KOHM+-1% 1/16W
R5504	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R5505	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R5506	AQ00214R	CHIP RESISTOR 5.6KOHM+-1% 1/16W
R5508	AQ00216R	CHIP RESISTOR 6.8KOHM+-1% 1/16W
R5509	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R5510	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R5511	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R5522	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R5523	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R5524	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R5525	0104274	CHIP RESISTOR 1.5KOHM+-1% 1/10W
D0001	CC11321R	DIODE MA726
D0002	CC10291R	DIODE 1SS353
D0003	5337422	DIODE DA221
D0401	5337351	DIODE MA132WK
D0552	CC10291R	DIODE 1SS353
D0553	CC10291R	DIODE 1SS353
D0554	CC10291R	DIODE 1SS353
D0555	CC10291R	DIODE 1SS353
D0556	CC10291R	DIODE 1SS353
D0557	CC10291R	DIODE 1SS353
D0559	CC11191R	DIODE 1SS388
D0560	CC10291R	DIODE 1SS353
D0601	5337351	DIODE MA132WK
D0602	5337351	DIODE MA132WK
D0603	5337351	DIODE MA132WK
D0605	CC11321R	DIODE MA726
D0901	CC10291R	DIODE 1SS353
D0902	CC10291R	DIODE 1SS353
D0905	CC11321R	DIODE MA726
D0906	5337351	DIODE MA132WK
D1002	CC10291R	DIODE 1SS353
D1101	CC10291R	DIODE 1SS353
D1301	5337422	DIODE DA221
D1302	CC10291R	DIODE 1SS353
D3901	5337354	DIODE MA133
D5301	CC10161R	DIODE MA781WK
IC0001	CK22711R	IC MM6564XFBE
IC0101	1366631	IC HA118189MP
IC0201	CK24801U	IC MB87L1551PMT2
IC0202	CK21332U	IC HD49323AF
IC0203	CK26431R	IC 74LCX541MTCX
IC0204	CK26511R	IC MM1501XNRE
IC0205	CK15281R	IC NJM2535V
IC0210	CK23351R	IC SN74AHC1GU04HDCK
IC0211	CK26461R	IC TC7WH157FK
IC0301	CK26512R	IC MM1503XNRE[TYPE 965]
IC0301	CK26513R	IC MM1504XNRE[TYPE 865]
IC0350	CK22501R	IC UPS5020GR-125-8JG
IC0401	CK20272R	IC LA7458W
IC0403	CK26311U	IC LA74202W
IC0551	CK23901U	IC BA9736KV
IC0553	CK20191R	IC PQ20WZ51
IC0554	CK22152R	IC TK11125S
IC0631	CK18331R	IC LB1950V-TLM
IC0632	CK26781R	IC LMV751M5X
IC0651	CK22031R	IC LB1991V
IC0671	1366651	IC BA6417F
IC0701	CE10171R	MODULE GP1U101X
IC0901	CK24965U	IC CXP87360-135R
IC0902	CK21712R	IC NJU7285BV
IC0904	CK16996R	IC UPD6461GS-950-E1
IC0905	CK25871R	IC SN74AHC2G53H
IC0906	CK25871R	IC SN74AHC2G53H
IC0907	CK25871R	IC SN74AHC2G53H
IC1002	CK12061R	IC UPD16510GR
IC1104	CK26471U	IC HD6432237M13TE
IC1105	CK26452R	IC X25330S8I-2.5T3
IC1111	CK18021R	IC MB88347PFV
IC1201	CK20621R	IC UPD5023GS-147-GJG
IC1301	CK17992R	IC UPD16833AG3
IC1401	FU10361	SENSOR GYRO(CG-L33AB0)

SYMBOL NO	P-NO	DESCRIPTION
IC1402	FU10363	SENSOR GYRO(CG-L33AB2)
IC1403	CK24841R	IC NJU7018M
IC3801	CK26701U	IC CXA3017R
IC3802	CK25841R	IC NC7S08P5
IC3803	CK18303R	IC SN74AHC126PW
IC3991	CK21441R	IC NJM2533V
IC5501	CK18431R	IC TL5001CD
LED0701	CC10772R	DIODE SML-010LT
LED0751	CC11251R	DIODE SML-010MT
Q0001	CA11901	TRANSISTOR UPA1770G
Q0002	CA10271R	TRANSISTOR 2SB1424R
Q0003	1323279	TRANSISTOR DTC114YE
Q0004	CA11941R	TRANSISTOR 2SK3019
Q0106	CA10162R	TRANSISTOR 2SA1577Q
Q0107	1323279	TRANSISTOR DTC114YE
Q0109	1323294	TRANSISTOR 2SA1774RS
Q0110	1323294	TRANSISTOR 2SA1774RS
Q0111	1323291	TRANSISTOR 2SC4617
Q0112	1323291	TRANSISTOR 2SC4617
Q0114	1323294	TRANSISTOR 2SA1774RS
Q0116	1323291	TRANSISTOR 2SC4617
Q0117	1323291	TRANSISTOR 2SC4617
Q0118	1323279	TRANSISTOR DTC114YE
Q0119	1323291	TRANSISTOR 2SC4617
Q0120	1323294	TRANSISTOR 2SA1774RS
Q0121	1323252	TRANSISTOR XP4501
Q0122	1323252	TRANSISTOR XP4501
Q0211	1323294	TRANSISTOR 2SA1774RS
Q0212	1323279	TRANSISTOR DTC114YE
Q0301	1323279	TRANSISTOR DTC114YE
Q0302	1323279	TRANSISTOR DTC114YE
Q0303	1323291	TRANSISTOR 2SC4617
Q0304	1323279	TRANSISTOR DTC114YE
Q0350	1323294	TRANSISTOR 2SA1774RS
Q0351	1323294	TRANSISTOR 2SA1774RS
Q0352	1323294	TRANSISTOR 2SA1774RS
Q0401	CA10162R	TRANSISTOR 2SA1577Q
Q0402	1323291	TRANSISTOR 2SC4617
Q0403	1323279	TRANSISTOR DTC114YE
Q0404L	1323279	TRANSISTOR DTC114YE
Q0404R	1323279	TRANSISTOR DTC114YE
Q0405L	1323294	TRANSISTOR 2SA1774RS
Q0405R	1323294	TRANSISTOR 2SA1774RS
Q0406L	1323291	TRANSISTOR 2SC4617
Q0406R	1323291	TRANSISTOR 2SC4617
Q0407L	1323291	TRANSISTOR 2SC4617
Q0407R	1323291	TRANSISTOR 2SC4617
Q0408L	1323291	TRANSISTOR 2SC4617
Q0408R	1323291	TRANSISTOR 2SC4617
Q0409	1323279	TRANSISTOR DTC114YE
Q0551	1308011	TRANSISTOR MPL1
Q0552	CA10271R	TRANSISTOR 2SB1424R
Q0553	1308011	TRANSISTOR MPL1
Q0555	CA10271R	TRANSISTOR 2SB1424R
Q0556	1323279	TRANSISTOR DTC114YE
Q0557	CA10271R	TRANSISTOR 2SB1424R
Q0559	1308011	TRANSISTOR MPL1
Q0561	1308011	TRANSISTOR MPL1
Q0562	1308011	TRANSISTOR MPL1
Q0563	1323279	TRANSISTOR DTC114YE
Q0570	CA10271R	TRANSISTOR 2SB1424R
Q0571	1323291	TRANSISTOR 2SC4617
Q0572	1323287	TRANSISTOR UMD9N
Q0573	1323287	TRANSISTOR UMD9N
Q0574	1323287	TRANSISTOR UMD9N

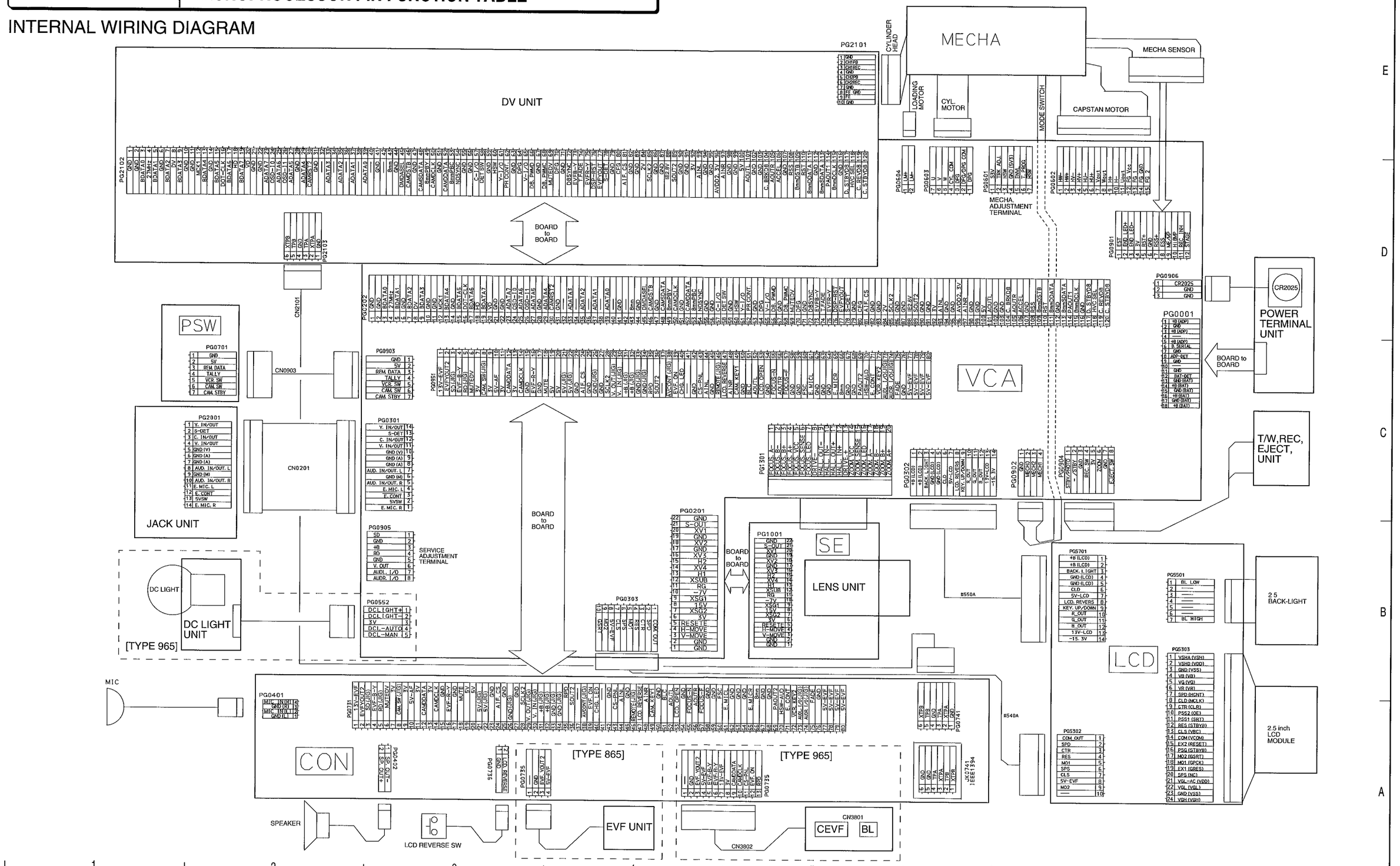
SYMBOL NO	P-NO	DESCRIPTION
Q0575	1323291	TRANSISTOR 2SC4617
Q0576	1323291	TRANSISTOR 2SC4617
Q0577	1323291	TRANSISTOR 2SC4617
Q0578	1323287	TRANSISTOR UMD9N
Q0579	1323279	TRANSISTOR DTC114YE
Q0580	1323252	TRANSISTOR XP4501
Q0601	1323279	TRANSISTOR DTC114YE
Q0604	CA11941R	TRANSISTOR 2SK3019
Q0605	CA11941R	TRANSISTOR 2SK3019
Q0606	CA11941R	TRANSISTOR 2SK3019
Q0607	1323279	TRANSISTOR DTC114YE
Q0701	1323279	TRANSISTOR DTC114YE
Q0732	1323279	TRANSISTOR DTC114YE
Q0901	1323294	TRANSISTOR 2SA1774RS
Q0902	1323291	TRANSISTOR 2SC4617
Q0903	1323279	TRANSISTOR DTC114YE
Q0904	1323294	TRANSISTOR 2SA1774RS
Q0905	5328975	TRANSISTOR 2SC2412K
Q0906	1323253	TRANSISTOR XP4401
Q0907	1323252	TRANSISTOR XP4501
Q0909	1323279	TRANSISTOR DTC114YE
Q0910	1323278	TRANSISTOR DTA114YE
Q1001	5328221	TRANSISTOR 2SC2620-QC
Q1201	1323291	TRANSISTOR 2SC4617
Q1202	1323291	TRANSISTOR 2SC4617
Q1203	1323142	TRANSISTOR 2SC2411K
Q1301	1323286	TRANSISTOR UMH9N
Q1401	1323279	TRANSISTOR DTC114YE
Q1402	1323252	TRANSISTOR XP4501
Q3801	1323292	TRANSISTOR 2SA1774
Q3802	1323292	TRANSISTOR 2SA1774
Q3803	1323279	TRANSISTOR DTC114YE
Q3804	1323301	TRANSISTOR 2SB1219
Q3805	1323279	TRANSISTOR DTC114YE
Q3807	1323291	TRANSISTOR 2SC4617
Q3808	1323292	TRANSISTOR 2SA1774
Q3809	1323291	TRANSISTOR 2SC4617
Q3810	1323292	TRANSISTOR 2SA1774
Q3811	1323291	TRANSISTOR 2SC4617
Q3812	1323292	TRANSISTOR 2SA1774
Q3813	1323292	TRANSISTOR 2SA1774
Q3814	1323279	TRANSISTOR DTC114YE
Q3903	1323291	TRANSISTOR 2SC4617
Q3904	1323291	TRANSISTOR 2SC4617
Q5303	1323279	TRANSISTOR DTC114YE
Q5304	1323279	TRANSISTOR DTC114YE
Q5305	1323293	TRANSISTOR 2SC4617 (R/S)
Q5306	1323279	TRANSISTOR DTC114YE
Q5307	1323279	TRANSISTOR DTC114YE
Q5501	1323272	TRANSISTOR DTA144EE
Q5502	1323279	TRANSISTOR DTC114YE
Q5505	1323293	TRANSISTOR 2SC4617 (R/S)
Q5506	1323293	TRANSISTOR 2SC4617 (R/S)
Q5510	1323293	TRANSISTOR 2SC4617 (R/S)
Q5511	1308011	TRANSISTOR MPL1
Q5512	1323012	TRANSISTOR 2SC3647
Q5513	1323012	TRANSISTOR 2SC3647
T0551	BC10421R	TRANSFORMER
T5501	BC10351R	COIL
L0101	BA10334R	COIL 10UH
L0102	BA10142R	COIL
L0103	BA10315R	COIL 150UH
L0104	BA10143R	COIL 10UH
L0105	BA10143R	COIL 10UH
L0106	BA10145R	COIL

SYMBOL NO	P-NO	DESCRIPTION
L0107	BA10154R	COIL 82UH
L0108	BA10316R	COIL
L0118	BA10316R	COIL
L0201	BA10577R	COIL 10UH
L0202	BA10577R	COIL 10UH
L0203	BA10577R	COIL 10UH
L0204	BA10577R	COIL 10UH
L0205	BA10577R	COIL 10UH
L0209	BA10577R	COIL 10UH
L0350	BA10577R	COIL 10UH
L0351	BA10577R	COIL 10UH
L0352	BA10577R	COIL 10UH
L0401	BA10582R	COIL 47UH
L0402	BA10582R	COIL 47UH
L0403	BA10582R	COIL 47UH
L0404	BA10584R	COIL 100UH
L0551	BA10691R	COIL
L0552	BA10693R	COIL
L0554	BA10695R	COIL
L0558	BA10577R	COIL 10UH
L0559	BA10582R	COIL 47UH
L0560	BA10582R	COIL 47UH
L0561	BA10695R	COIL
L0563	BA10691R	COIL
L0564	BA10695R	COIL
L0565	BA10695R	COIL
L0566	BA10582R	COIL 47UH
L0567	BA10582R	COIL 47UH
L0568	BA10582R	COIL 47UH
L0569	BA10582R	COIL 47UH
L0631	BA10582R	COIL 47UH
L0701	BA10579R	COIL 22UH
L0732	BA10579R	COIL 22UH
L0901	BA10577R	COIL 10UH
L0902	BA10577R	COIL 10UH
L0903	BA10582R	COIL 47UH
L1103	BA10577R	COIL 10UH
L3801	BA10577R	COIL 10UH
L3802	BA10577R	COIL 10UH
L3803	BA10577R	COIL 10UH
L3804	BA10577R	COIL 10UH
L5301	BA10577R	COIL 10UH
L5302	BA10584R	COIL 10UH
L5303	BA10584R	COIL 10UH
L5304	BA10577R	COIL 10UH
L5501	BA10333R	COIL 4.7UH
L5502	BA10693R	COIL
L5503	BA10698R	COIL
X0202	BL11092R	CRYSTAL 28.5MHZ
X0901	BL10901R	CRYSTAL
X0902	BL10313R	CRYSTAL
BL0201	BM00141R	FILTER
BL0202	BM00141R	FILTER
BL0203	BM00137R	FILTER
BL0204	BM00137R	FILTER
BL0205	BM00141R	FILTER
BL0206	BM00141R	FILTER
BL0302	BM00141R	FILTER
BL0303	BM00141R	FILTER
BL0304	BM00142R	FILTER
BL0305	BM00142R	FILTER
BL0306	BM00142R	FILTER
BL0307	BM00141R	FILTER
BL3801	DT10401	LIGHT,BACK
CN0201	EK11361	FLEXIBLE,CONNECTOR

SYMBOL NO	P-NO	DESCRIPTION
CN0903	EF11504	CONNECTOR
CN2101	JD11201	CONNECTOR
CN3801	EF11507	CONNECTOR
CN3802	EK10806	CONNECTOR
⚠F0551	FM10261R	FUSE 1.5A
⚠F0552	FM10261R	FUSE 1.5A
⚠F0553	FM10261R	FUSE 1.5A
JK0741	EY10951	JACK
LD3801	DB10782	LIQUID CRYSTAL
PG0001	1830309	CONNECTOR
PG0101	EA11981R	PLUG
PG0102	EA11981R	PLUG
PG0103	EA11981R	PLUG
PG0104	EA11981R	PLUG
PG0201	1830118	CONNECTOR
PG0202	EA11941R	PLUG
PG0301	EA11043R	CONNECTOR
PG0302	EA11364R	PLUG
PG0303	EA11359R	CONNECTOR
PG0401	5668673	MINI PLUG
PG0402	5669191	PLUG
PG0501	EA11981R	PLUG
PG0502	EA11981R	PLUG
PG0503	EA11981R	PLUG
PG0552	5669194	PLUG
PG0601	5692362	MINI PLUG
PG0602	EA11474R	PLUG
PG0603	EA11477R	CONNECTOR
PG0604	5668671	MINI PLUG
PG0701	5669199	PLUG
PG0731	EA10991R	CONNECTOR
PG0735	5669193	MINI PLUG
PG0735	5669197	PLUG
PG0736	5669166	PLUG
PG0741	EA11073R	PLUG
PG0901	EA11473R	PLUG
PG0902	EA10642R	CONNECTOR
PG0903	5669199	PLUG
PG0904	EA11741R	CONNECTOR
PG0905	5669196	PLUG
PG0906	5669167	MINI PLUG
PG0951	EA10971R	PLUG
PG1001	1830117	CONNECTOR
PG1301	EA10346R	PLUG
PG3801	EA10342R	PLUG
PG3802	1830024	PLUG
PG3901	EA12011R	PLUG
PG3902	EA11072R	PLUG
PG3903	EA12011R	PLUG
PG5302	EA11359R	CONNECTOR
PG5303	EA11591R	CONNECTOR
PG5501	EA11477R	CONNECTOR
PG5701	EA11364R	CONNECTOR
SW0701	FB10321R	SWITCH
SW0702	FB10201R	SWITCH
SW0761	1742012	SWITCH
SW0762	1742012	SWITCH
SW0763	1742012	SWITCH
SW0764	1742012	SWITCH
SW0765	1742012	SWITCH
SW0766	1742012	SWITCH
SW0767	1742012	SWITCH
SW0768	FB10272R	SWITCH
SW0769	FB10272R	SWITCH
SW0770	1742012	SWITCH
SW0771	FB10272R	SWITCH
SW0772	FB10272R	SWITCH
SW0773	5635331	SWITCH
SW0781	1742012	SWITCH
SW5302	FB10272R	SWITCH
SW5303	FB10272R	SWITCH

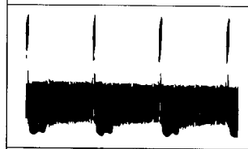
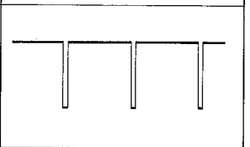
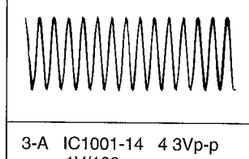
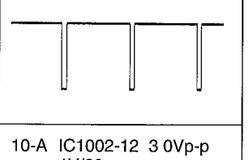
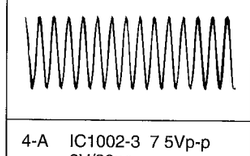
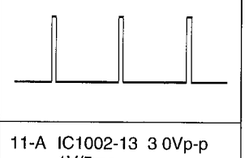
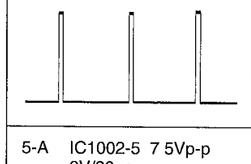
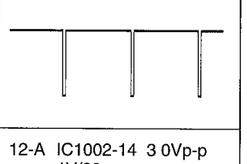
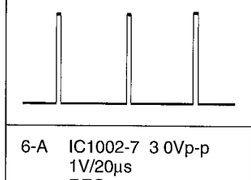
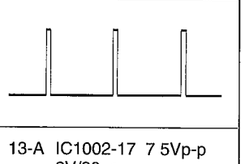
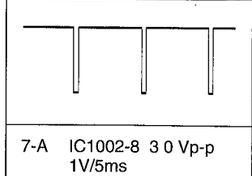
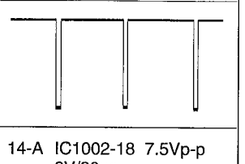
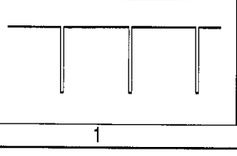
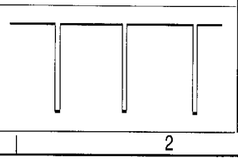
CHAPTER 6 SCHEMATIC, CIRCUIT BOARD AND BLOCK DIAGRAMS/ MICROPROCESSOR PIN FUNCTION TABLE

INTERNAL WIRING DIAGRAM

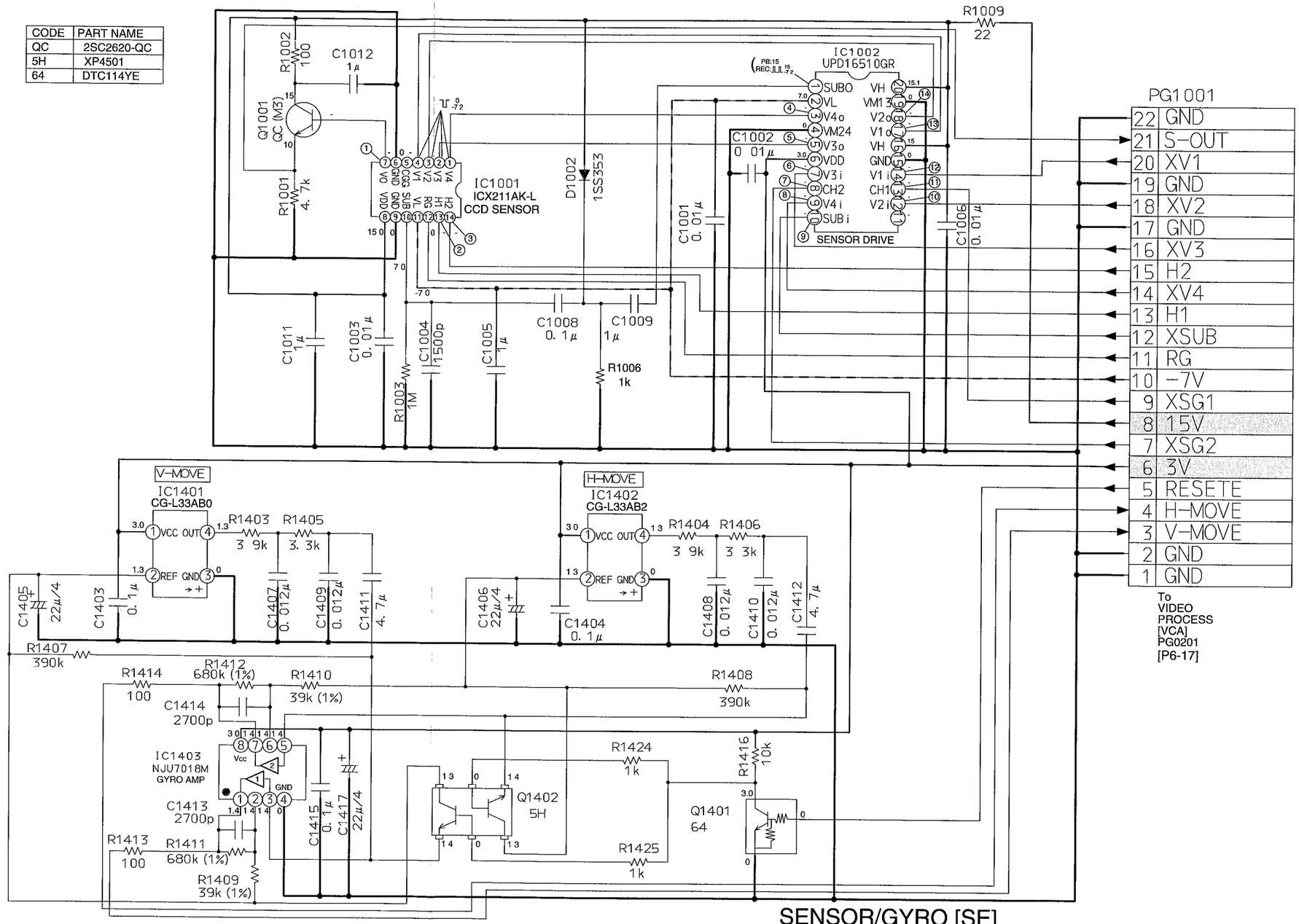


SENSOR/GYRO [SE] SCHEMATIC DIAGRAM

SENSOR WAVEFORMS

1-A IC1001-7 1 1Vp-p 0 2V/20µs REC	8-A IC1002-9 3 0Vp-p 1V/20µs REC
	
2-A IC1001-13 4.3Vp-p 1V/100ns REC	9-A IC1002-10 3.0Vp-p 1V/20µs REC
	
3-A IC1001-14 4 3Vp-p 1V/100ns REC	10-A IC1002-12 3 0Vp-p 1V/20µs REC
	
4-A IC1002-3 7 5Vp-p 2V/20µs REC	11-A IC1002-13 3 0Vp-p 1V/5ms REC
	
5-A IC1002-5 7 5Vp-p 2V/20µs REC	12-A IC1002-14 3 0Vp-p 1V/20µs REC
	
6-A IC1002-7 3 0Vp-p 1V/20µs REC	13-A IC1002-17 7 5Vp-p 2V/20µs REC
	
7-A IC1002-8 3 0 Vp-p 1V/5ms REC	14-A IC1002-18 7.5Vp-p 2V/20µs REC
	

CODE	PART NAME
QC	2SC2620-QC
5H	XP4501
64	DTC114YE

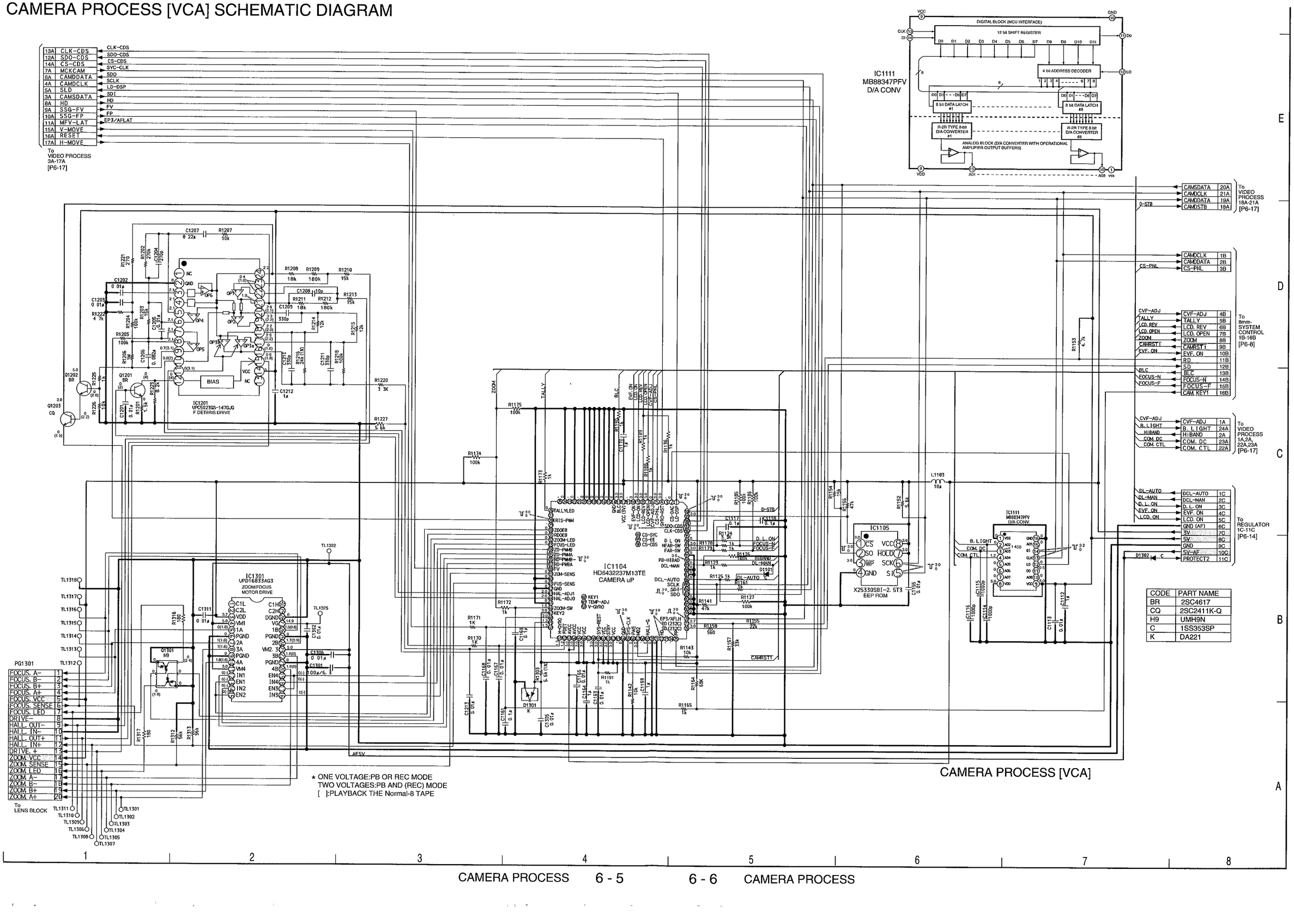


NOTE:VOLTAGES ARE MEASURED WHEN CAMERA IS POINTED AT THE COLOR BAR CHART

○— : WAVEFORMS No

SENSOR/GYRO [SE]

CAMERA PROCESS [VCA] SCHEMATIC DIAGRAM



CODE	PART NAME
BR	2SC4617
CQ	2SC2411K-Q
H9	UMH9N
C	1SS353SP
K	DA221

* ONE VOLTAGE:PB OR REC MODE
TWO VOLTAGES:PB AND (REC) MODE
[ ]:PLAYBACK THE Normal-8 TAPE

8mm-SYSTEM CONTROL [VCA] SCHEMATIC DIAGRAM

* ONE VOLTAGE:PB OR REC MODE
TWO VOLTAGES:PB AND (REC) MODE

○— WAVEFORMS No.

CODE	PART NAME
BR	2SC4617
*BR	2SC2412K-BRT
FR	2SA1774RS
5H	XP4501
5K	XP4401
54	DTA114YE
64	DTC114YE
C	1SS353SP
MU	MA132WK
M10	MA726

To CHARGE 1E-10E [P6-20]

To REGULATOR 2G-11G [P6-14]

To POWER SW [PSW] PG0701 [P6-10]

To T/W,REC,EJECT UNIT

To CONTROL [CON] PG0731 [P6-21]

To POWER TERMINAL UNIT

To VIDEO PROCESS 1L-34L,36L,42L,45L-62L [P6-17]

To CAMERA PROCESS 1B-16B [P6-6]

To SERVICE ADJUST TERMINAL

To REGULATOR 1G [P6-14]

To VIDEO PROCESS 35L,37L-39L,40L,41L,43L,44L [P6-17]

To SERVO 1K-16K [P6-11]

To MECHA. MODE SW [P6-9]

To MECHA. SENSOR PG0001 [P6-9]

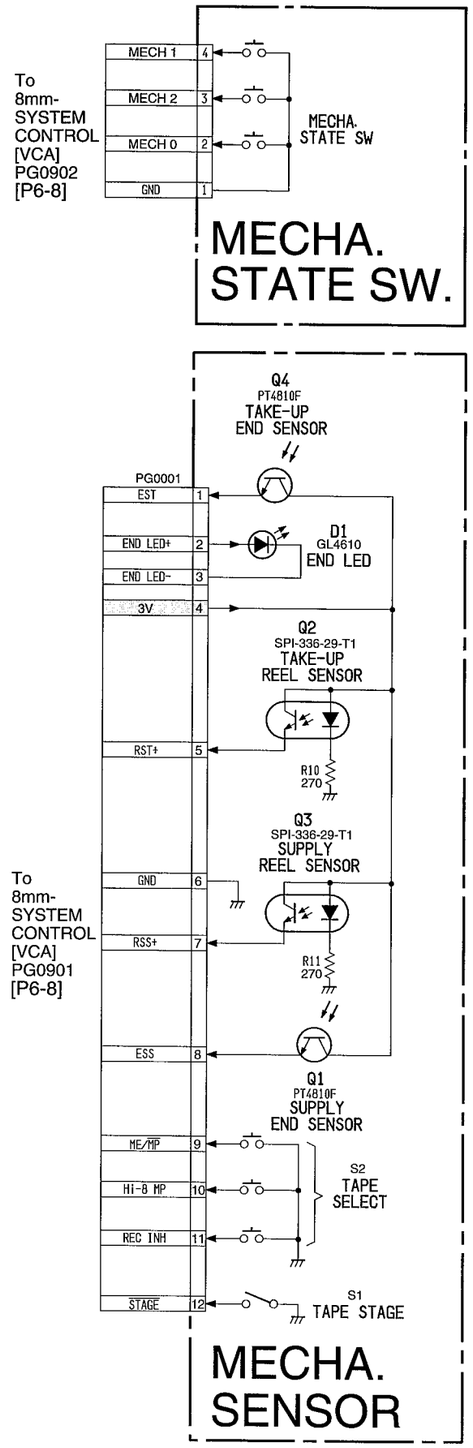
8mm-SYSTEM CONTROL [VCA]

SYSTEM CONTROL WAVEFORMS

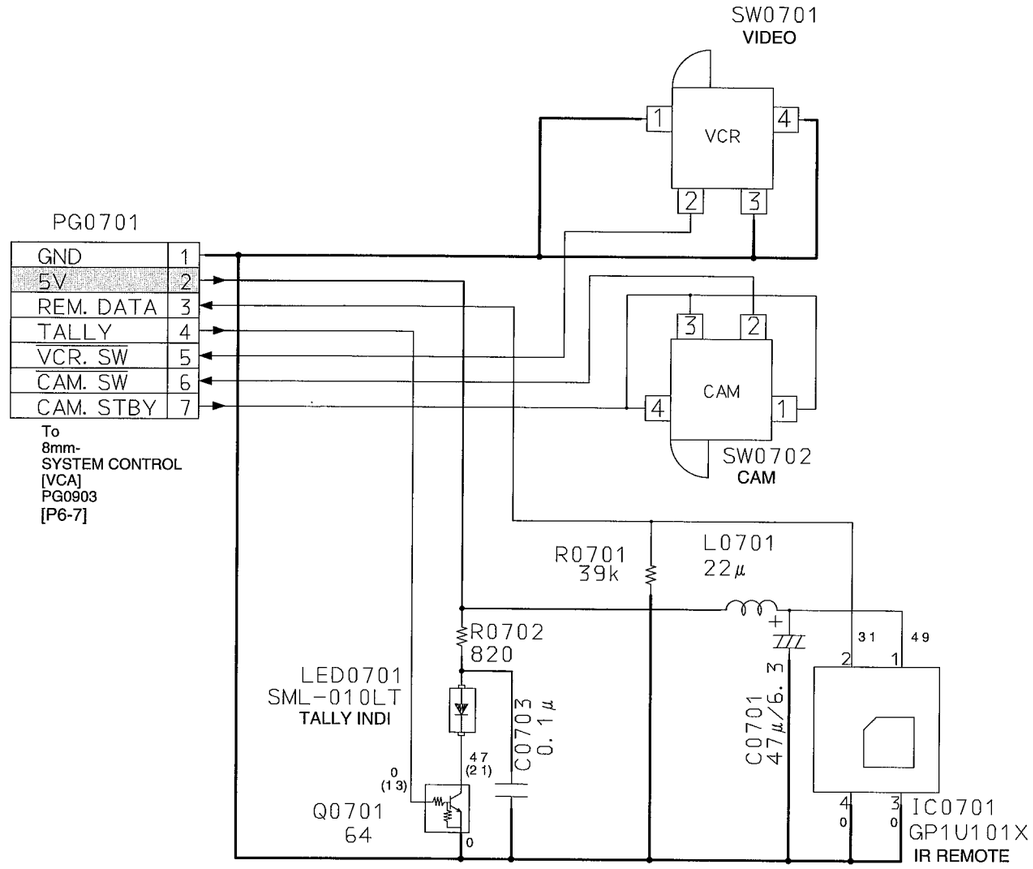
1-A IC0901-41 200mVp-p
0.5V/20µs
REC/PLAY

2-A IC0901-85 3.5Vp-p
1V/20µs
REC/PLAY

MECHA. STATE SWITCH/MECHA. SENSOR SCHEMATIC DIAGRAMS



POWER SW [PSW] SCHEMATIC DIAGRAM

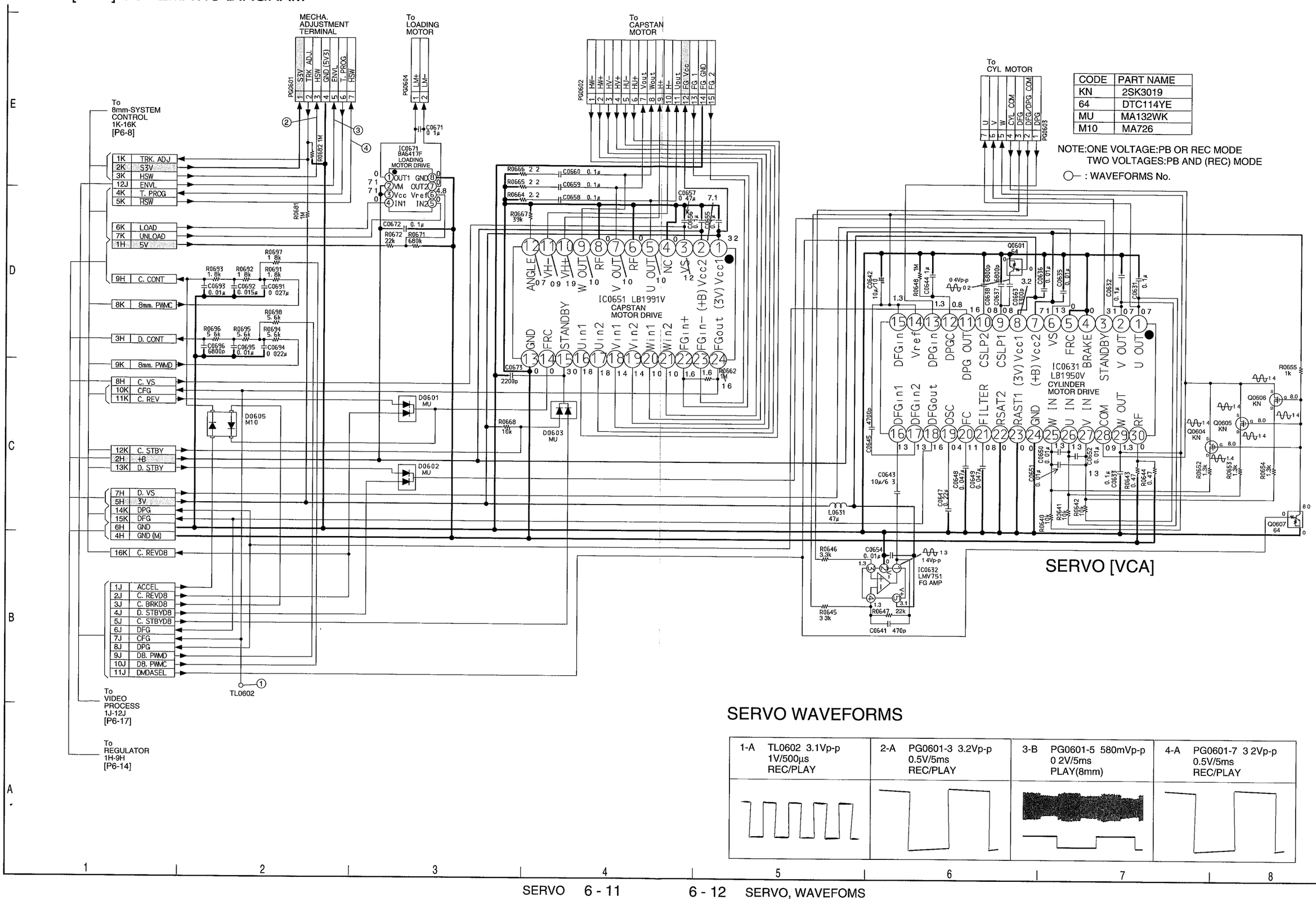


CODE	PART NAME
64	DTC114YE

*ONE VOLTAGE PB OR REC MODE
TWO VOLTAGES:PB AND (REC) MODE

POWER SW [PSW]

SERVO [VCA] SCHEMATIC DIAGRAM



CODE	PART NAME
KN	2SK3019
64	DTC114YE
MU	MA132WK
M10	MA726

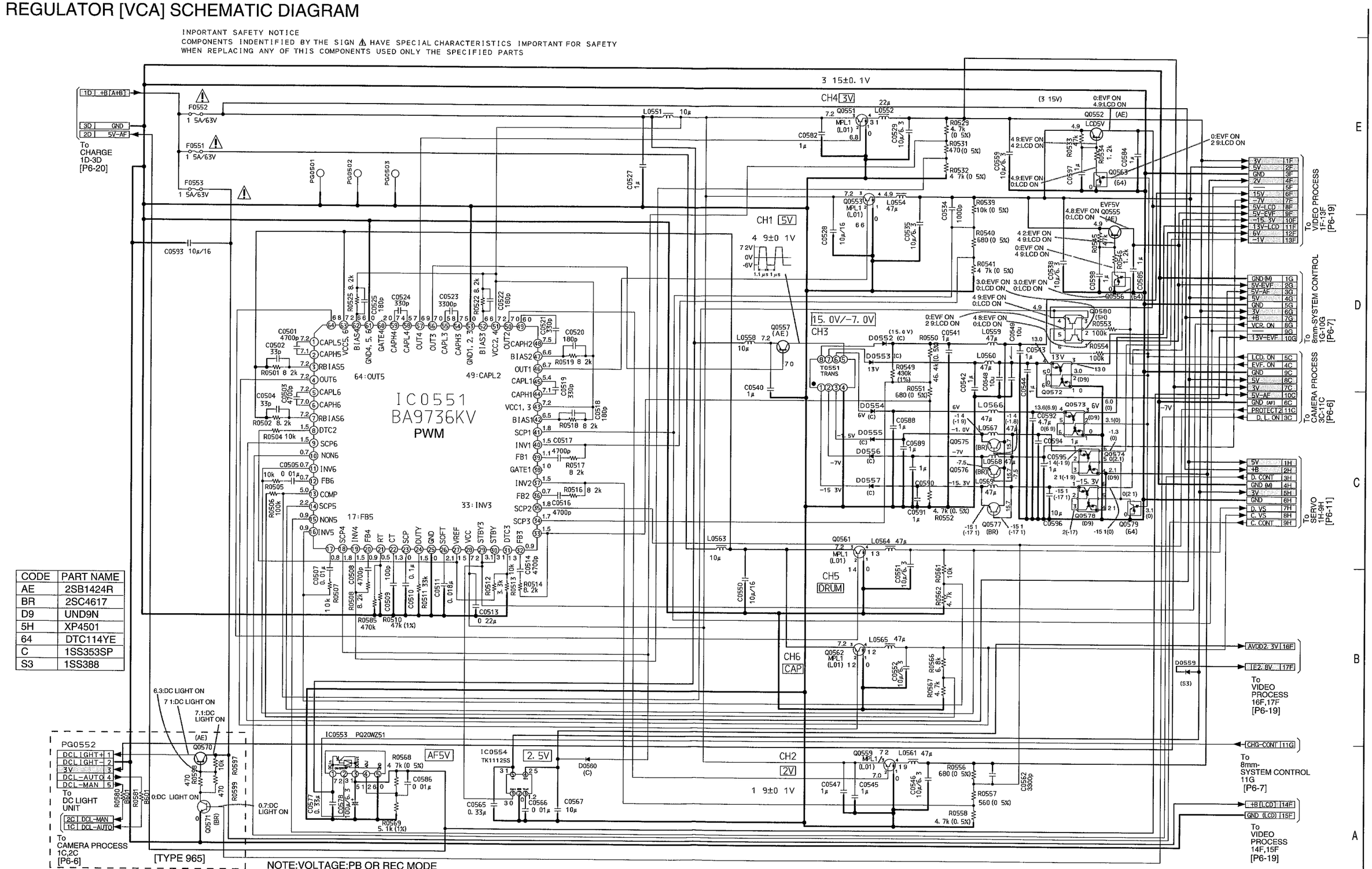
SERVO [VCA]

SERVO WAVEFORMS

1-A	TL0602 3.1Vp-p 1V/500µs REC/PLAY	2-A	PG0601-3 3.2Vp-p 0.5V/5ms REC/PLAY	3-B	PG0601-5 580mVp-p 0.2V/5ms PLAY(8mm)	4-A	PG0601-7 3.2Vp-p 0.5V/5ms REC/PLAY

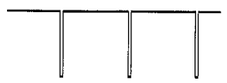
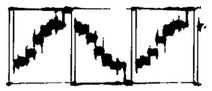
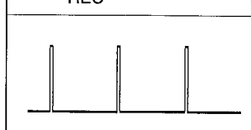
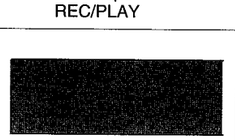
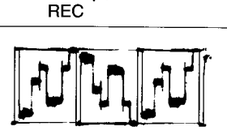
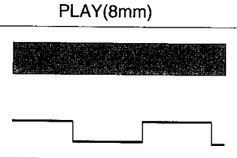
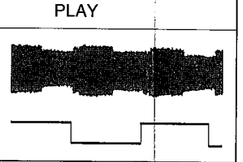
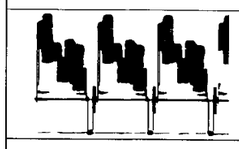
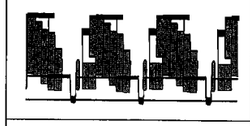
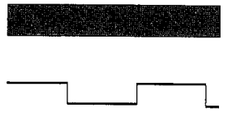
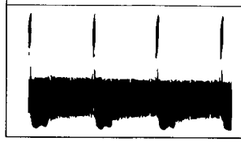
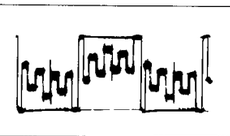
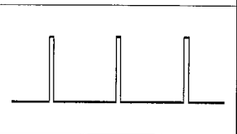
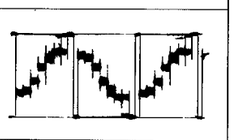
REGULATOR [VCA] SCHEMATIC DIAGRAM

INPORTANT SAFETY NOTICE
COMPONENTS INDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY
WHEN REPLACING ANY OF THIS COMPONENTS USED ONLY THE SPECIFIED PARTS



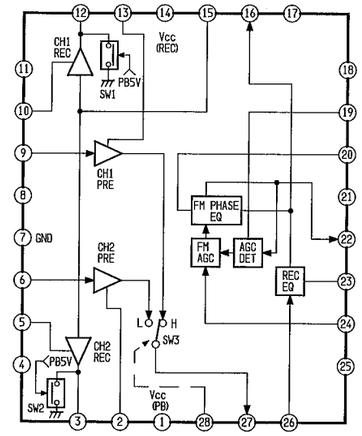
CODE	PART NAME
AE	2SB1424R
BR	2SC4617
D9	UND9N
5H	XP4501
64	DTC114YE
C	1SS353SP
S3	1SS388

VIDEO PROCESS WAVEFORMS

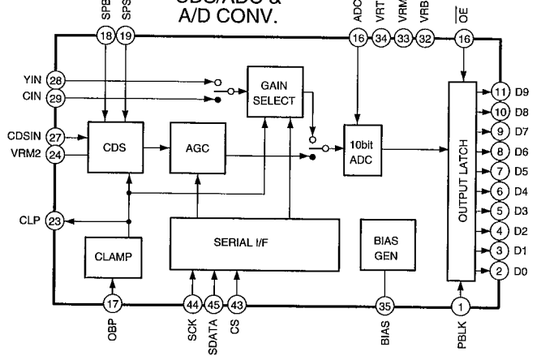
	1	2	3	4	5
E	1-A TL0207 3.0Vp-p 1V/20µs REC	7-A TL0280 1.1Vp-p 0 5V/20µs REC	11-B TL0351 4 0Vp-p 1V/20µs PLAY	16-A IC0202-18 3.0Vp-p 1V/50ns REC	21-B Q0351-B 2.1Vp-p 0 5V/20µs PLAY
					
	2-A TL0208 3 0Vp-p 1V/5ms REC	7-B TL0280 1.3Vp-p 0.5V/20µs PLAY	12-A TL0354 3.8Vp-p 1V/20µs REC	17-A IC0202-19 3.0Vp-p 1V/50ns REC	22-A Q0352-B 2 1Vp-p 0.5V/20µs REC
					
D	3-A TL0209 3 1Vp-p 1V/5ms REC	8-A TL0307 2.6Vp-p 1V/20µs REC/PLAY	12-B TL0354 4 0Vp-p 1V/20µs PLAY	18-B IC0202-29 400mVp-p 0.2V/20µs PLAY(8mm)	22-B Q0352-B 2 1Vp-p 0.5V/20µs PLAY
	4-A TL0210 3.0Vp-p 1V/5ms REC	9-A TL0312 430mVp-p 0.1V/20µs REC/PLAY	13-A TL0357 3.8Vp-p 1V/20µs REC	19-B Q0110-E 1.7Vp-p 1V/5ms PLAY(8mm)	23-B R0156 1 5Vp-p 0 5V/5ms PLAY
					
C	5-A TL0232 1.2Vp-p 0.2V/20µs REC	10-A TL0315 1.8Vp-p 0.5V/20µs REC	13-B TL0357 4.0Vp-p 1V/20µs PLAY	20-A Q0350-B 2.1Vp-p 0.5V/20µs REC	
					
B	5-B TL0232 1.0Vp-p 0.2V/20µs PLAY	10-B TL0315 1.9Vp-p 0.5V/20µs PLAY	14-B IC101-22 320mVp-p 0.2V/5ms PLAY(8mm)	20-B Q0350-B 2.1Vp-p 0.5V/20µs PLAY	
					
A	6-A TL0245 1.1Vp-p 0.2V/20µs REC	11-A TL0351 3.8Vp-p 1V/20µs REC	15-A IC0202-17 3.0Vp-p 1V/20µs REC	21-A Q0351-B 2.1Vp-p 0.5V/20µs REC	
					

IC BLOCK DIAGRAMS

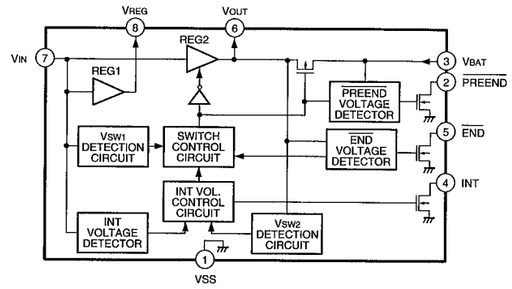
IC0101
HA118189MPER
VIDEO HEAD AMP



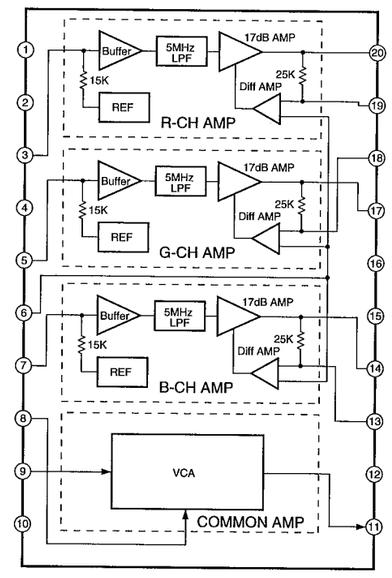
IC0202
HD49323AF
CDS/ADC &
A/D CONV.



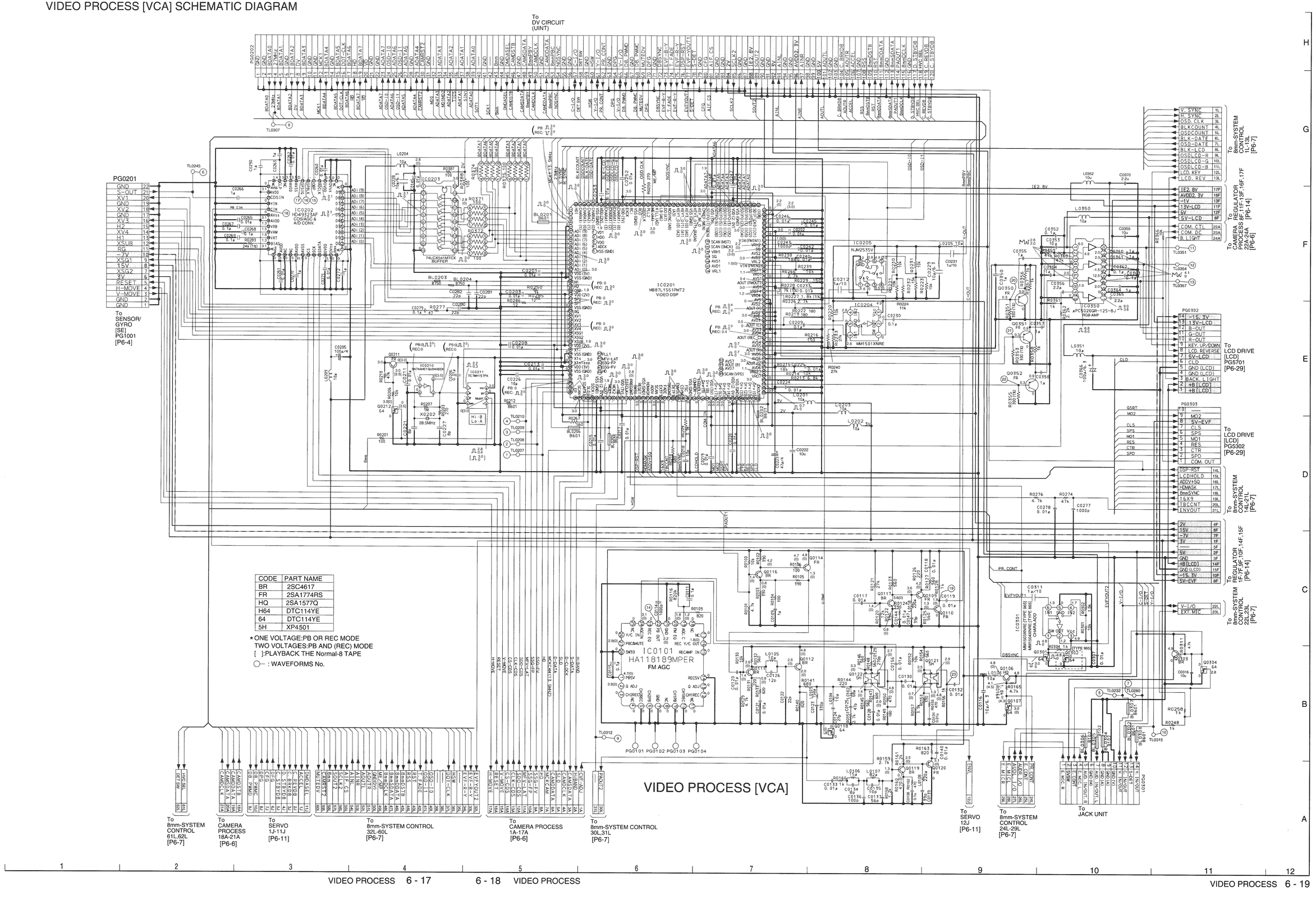
IC0902
NJU7285BV
BACK-UP DET



IC0350
µPC5020GR-125-8J
RGB AMP



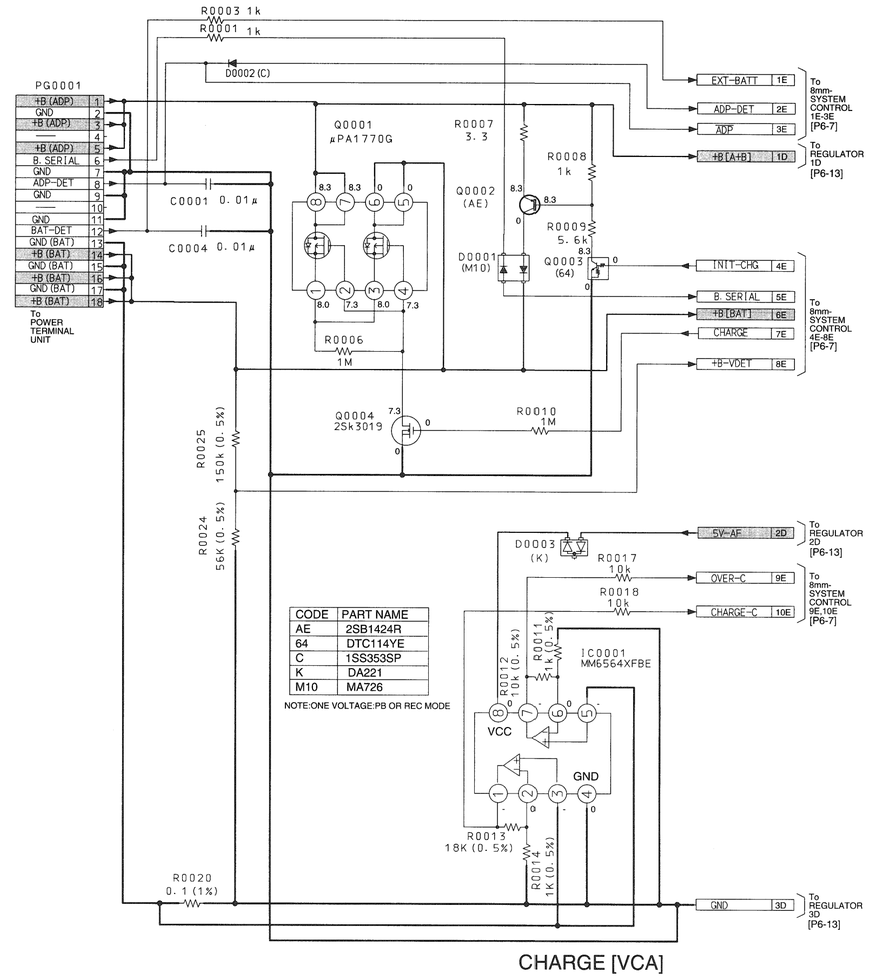
VIDEO PROCESS [VCA] SCHEMATIC DIAGRAM


To DV CIRCUIT (UINT)
PG0201
To SENSOR/ GYRO [SE] PG1001 [P6-4]
IC0201 MB87L1551PMT2 VIDEO DSP
IC0202 IR49225AF CDS/AGC & A/D CONV.
IC0210 SN74AHCT32DSHDCK
IC0211 TC7W157FK
IC0101 HA118189MPER FM AGC
IC0205 NJM2535V
X0202 28.5MHz
74LCX541MTCX BUFFER
PG0101 PG0102 PG0103 PG0104
To 8mm-SYSTEM CONTROL 61L,62L [P6-7]
To CAMERA PROCESS 18A-21A [P6-6]
To SERVO 1J-11J [P6-11]
To 8mm-SYSTEM CONTROL 32L-60L [P6-7]
To CAMERA PROCESS 1A-17A [P6-6]
To 8mm-SYSTEM CONTROL 30L,31L [P6-7]
To SERVO 12J [P6-11]
To 8mm-SYSTEM CONTROL 24L-29L [P6-7]
To JACK UNIT
To 8mm-SYSTEM CONTROL 1G-7G [P6-7]
To REGULATOR 1E-7F,9F-10F,14F,15F [P6-14]
To CAMERA REGULATOR PROCESS 8F,11F-13F,16F,17F [P6-6]
To LCD DRIVE [LCD] PG5701 [P6-29]
To LCD DRIVE [LCD] PG5302 [P6-29]
VIDEO PROCESS [VCA]

CODE	PART NAME
BR	2SC4617
FR	2SA1774RS
HQ	2SA1577Q
H64	DTC114YE
64	DTC114YE
5H	XP4501

*ONE VOLTAGE:PB OR REC MODE
TWO VOLTAGES:PB AND (REC) MODE
[ ]:PLAYBACK THE Normal-8 TAPE
◯— : WAVEFORMS No.

CHARGE [VCA] SCHEMATIC DIAGRAM

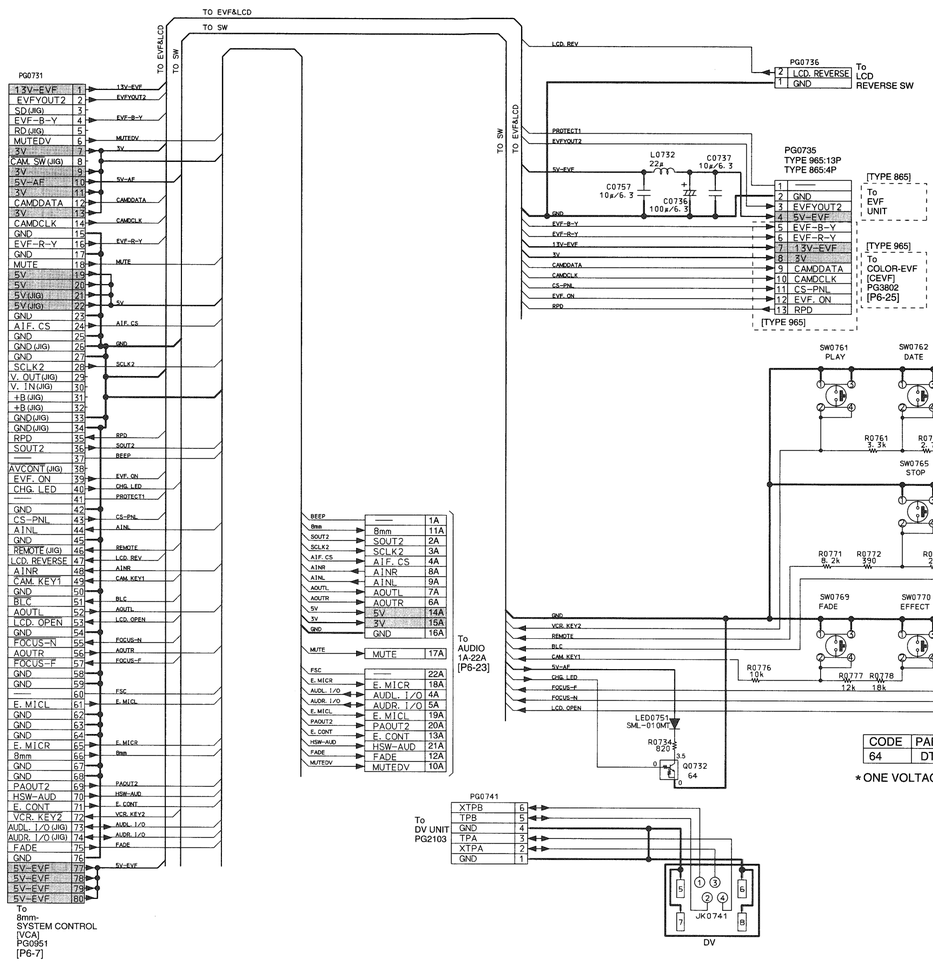


CODE	PART NAME
AE	2SB1424R
64	DTC114YE
C	1SS353SP
K	DA221
M10	MA726

NOTE:ONE VOLTAGE:PB OR REC MODE

CHARGE [VCA]

CONTROL [CON] SCHEMATIC DIAGRAM

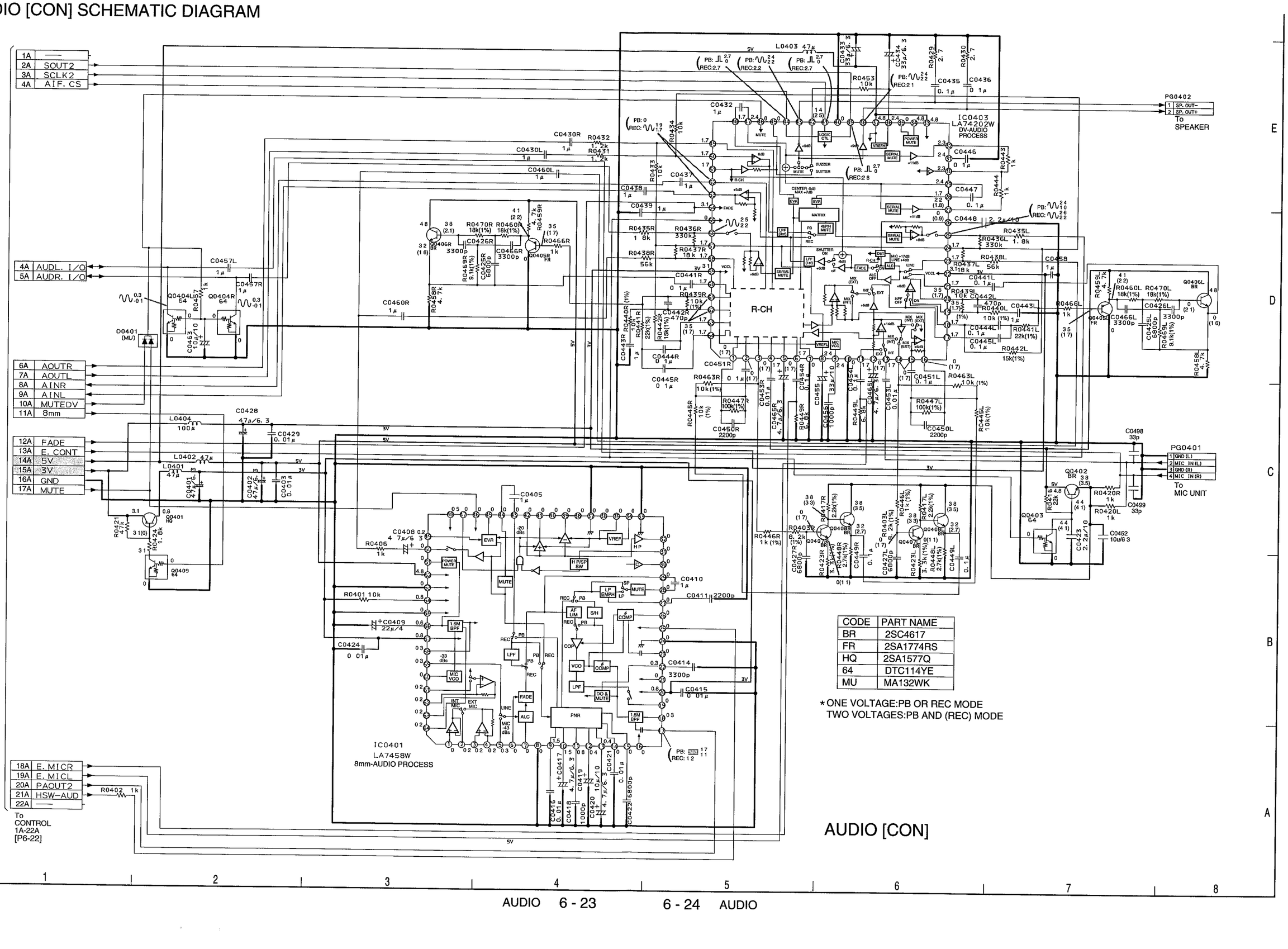


CODE	PART NAME
64	DTC114YE

* ONE VOLTAGE:PB OR REC MODE

CONTROL [CON]

AUDIO [CON] SCHEMATIC DIAGRAM

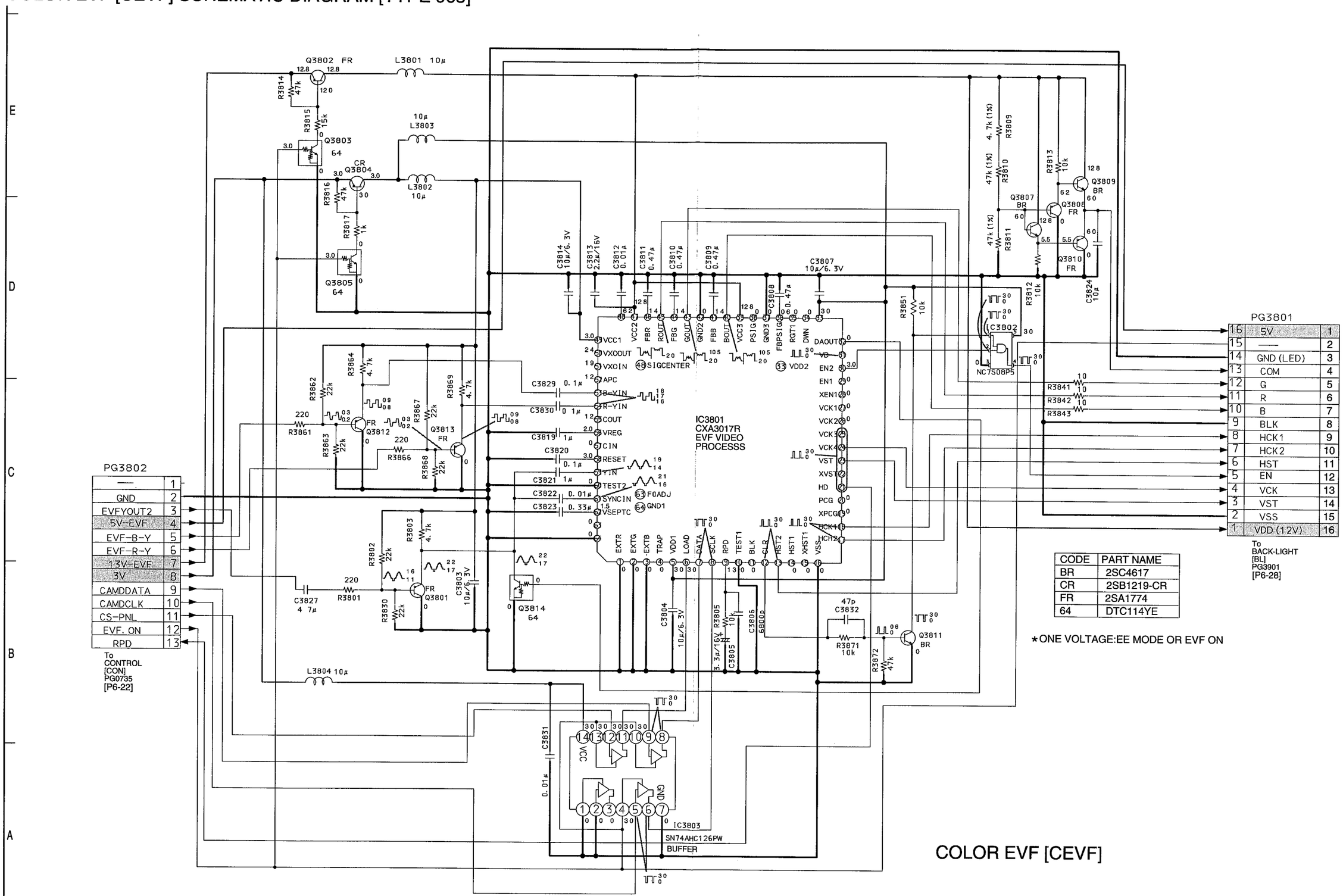


CODE	PART NAME
BR	2SC4617
FR	2SA1774RS
HQ	2SA1577Q
64	DTC114YE
MU	MA132WK

* ONE VOLTAGE:PB OR REC MODE
TWO VOLTAGES:PB AND (REC) MODE

AUDIO [CON]

COLOR EVF [CEVF] SCHEMATIC DIAGRAM [TYPE 965]

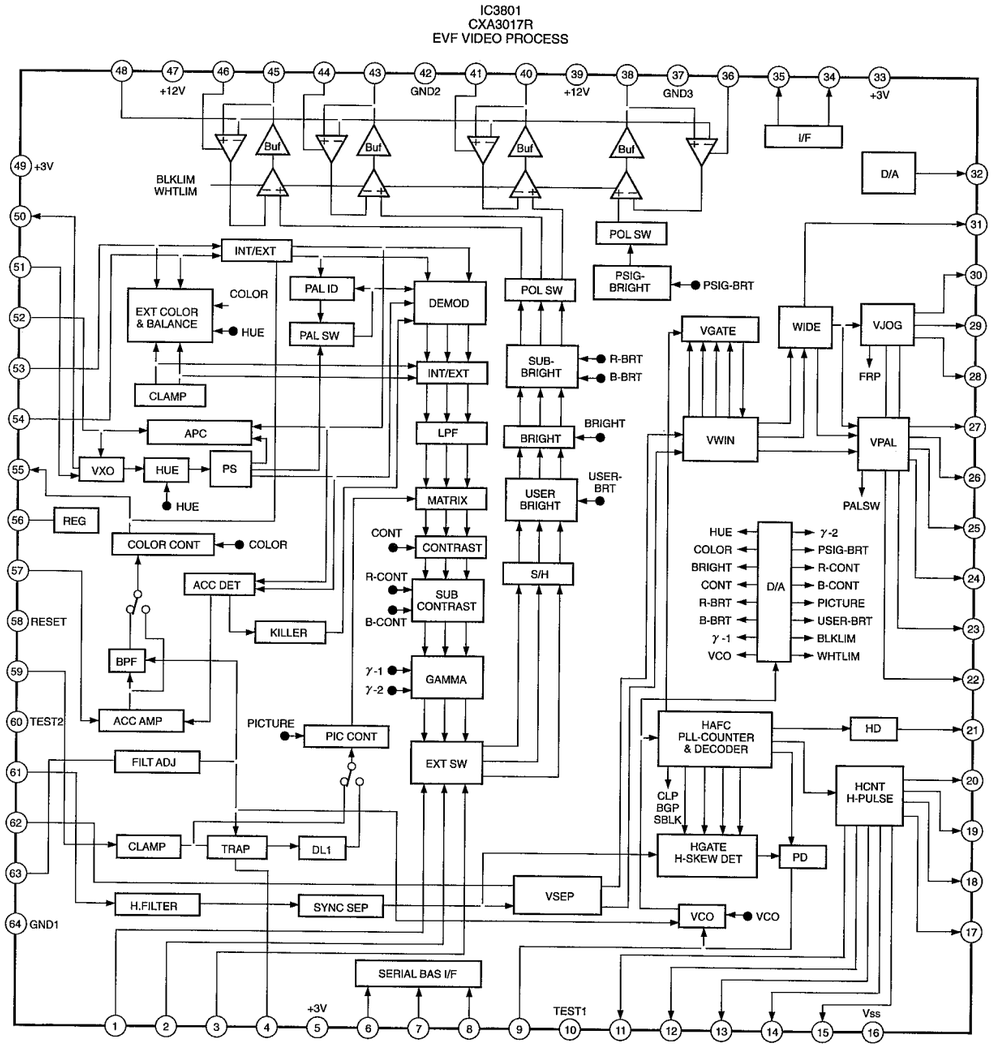


CODE	PART NAME
BR	2SC4617
CR	2SB1219-CR
FR	2SA1774
64	DTC114YE

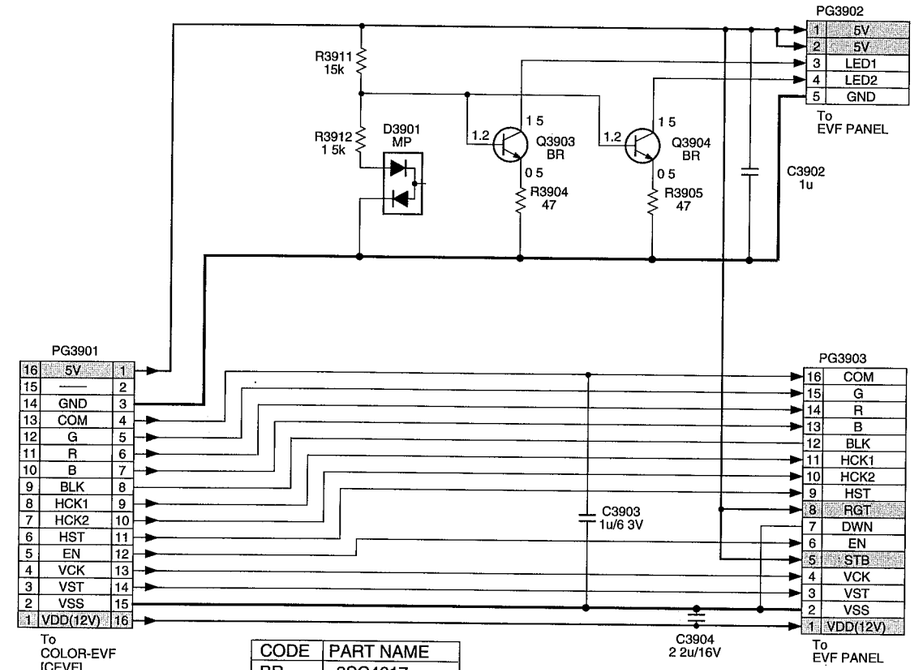
*ONE VOLTAGE:EE MODE OR EVF ON

COLOR EVF [CEVF]

IC BLOCK DIAGRAM



BACK-LIGHT [BL] SCHEMATIC DIAGRAM [TYPE 965]

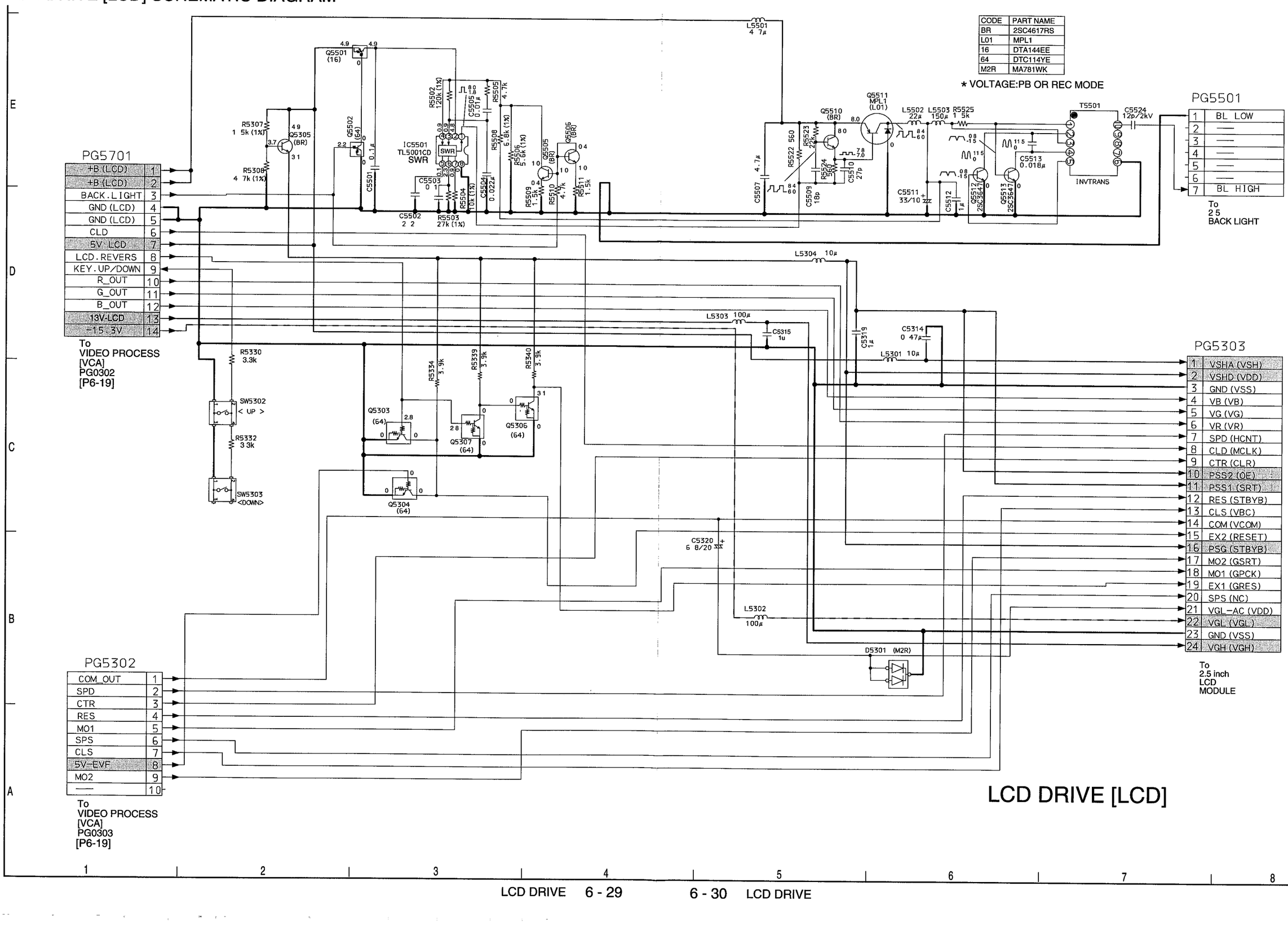


CODE	PART NAME
BR	2SC4617
FR	2SA1774RS
26	DTC144EE
MP	MA133

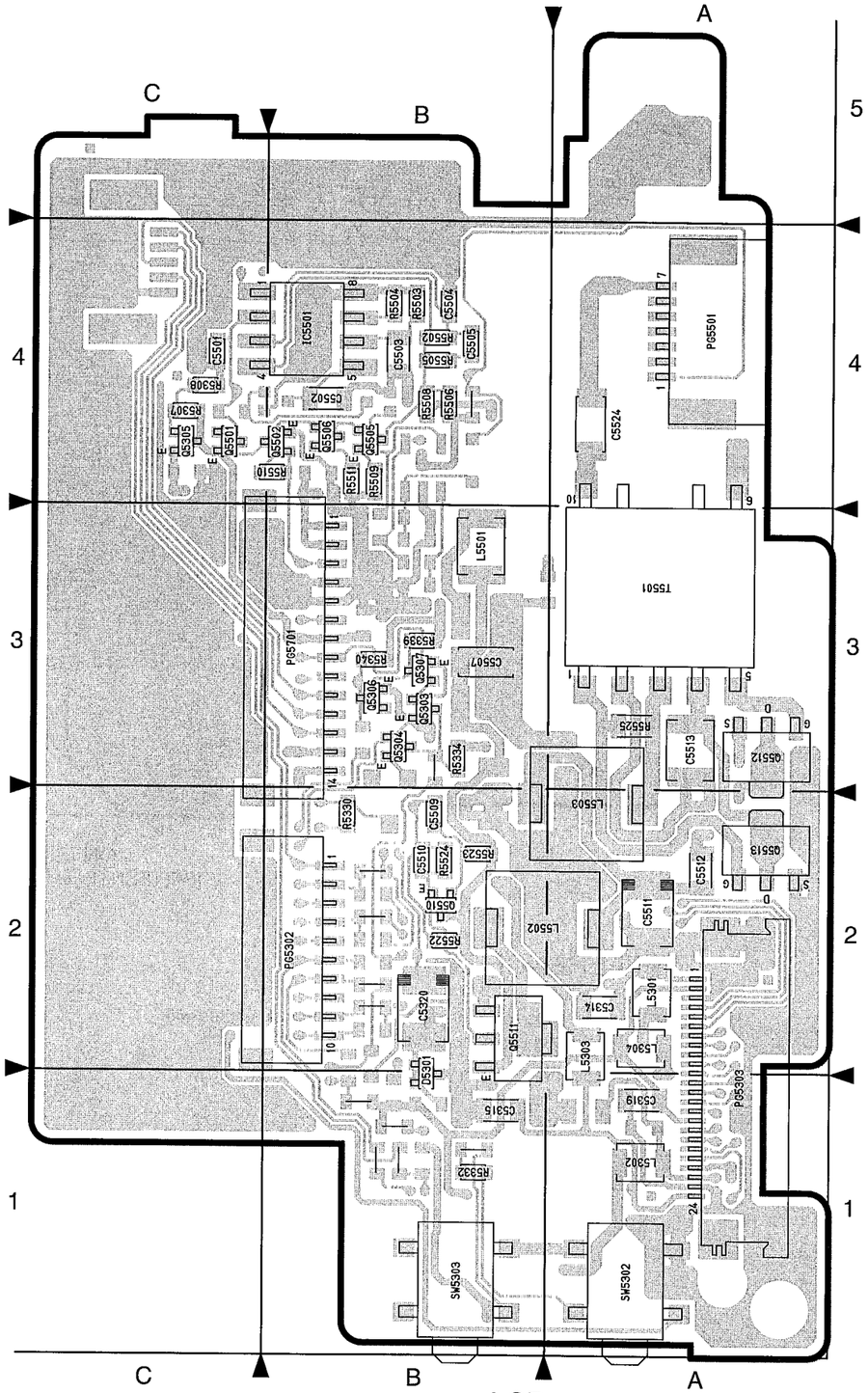
BACK-LIGHT [BL]

*ONE VOLTAGE.EE MODE OR EVF ON

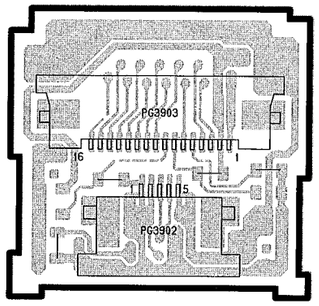
LCD DRIVE [LCD] SCHEMATIC DIAGRAM



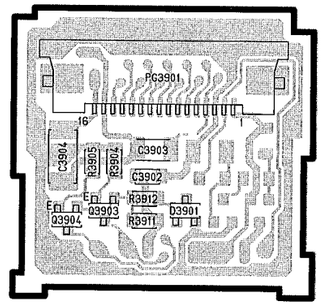
LCD DRIVE [LCD]



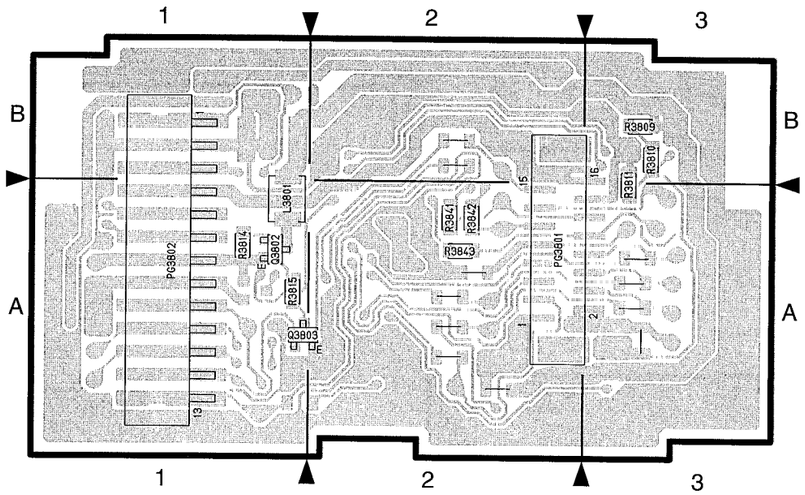
LCD [PATTERN No.JA1754-5]



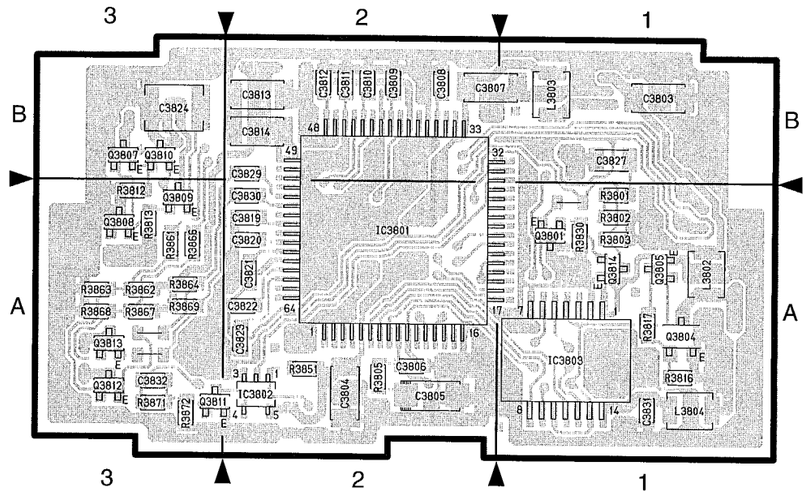
BL -SIDE A-



BL -SIDE B-
[PATTERN No.JA1824-3]
[TYPE 965]

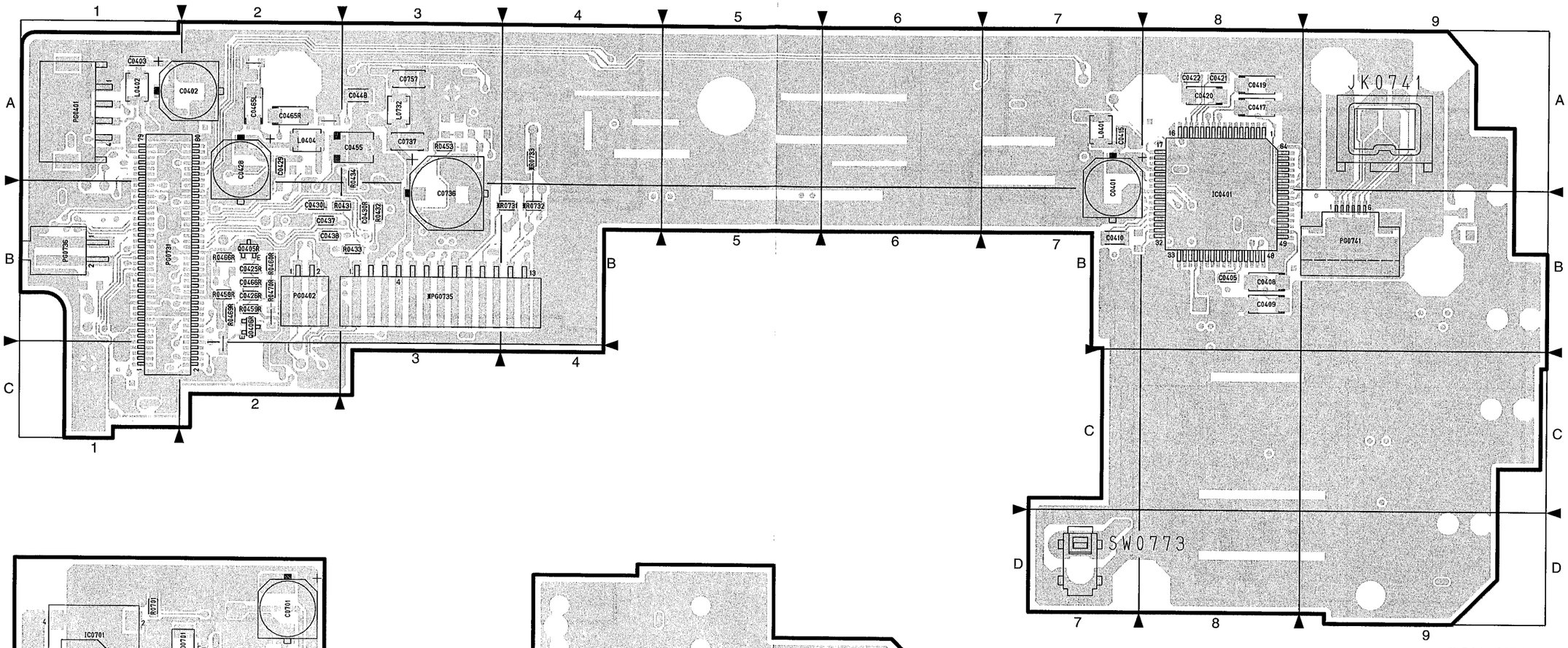


CEVF -SIDE A-

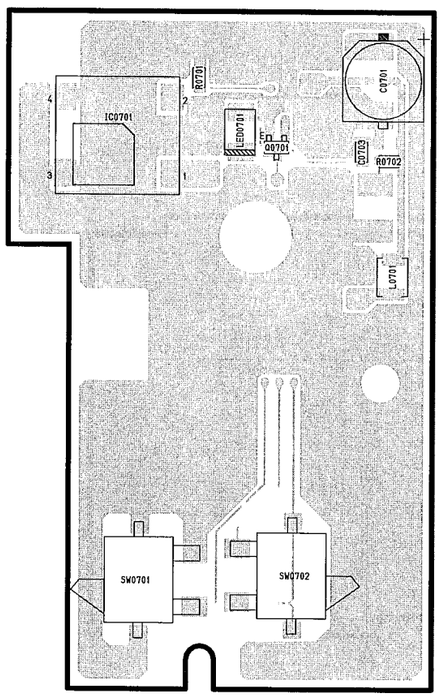


CEVF -SIDE B-
[PATTERN No.JA1824-3]
[TYPE 965]

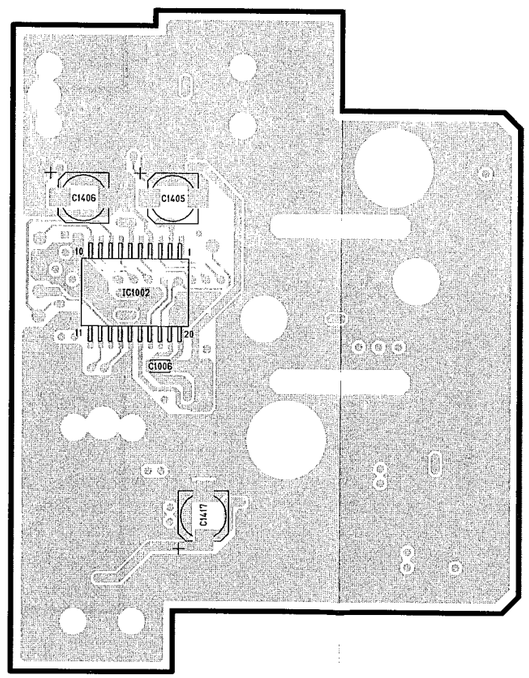
CON, SE, PSW CIRCUIT BOARD DIAGRAMS -SIDE A-



CON -SIDE A-
[PATTERN No.JA1820-5]



PSW -SIDE A-
[PATTERN No.JA1820-5]



SE -SIDE A-
[PATTERN No.JA1820-5]

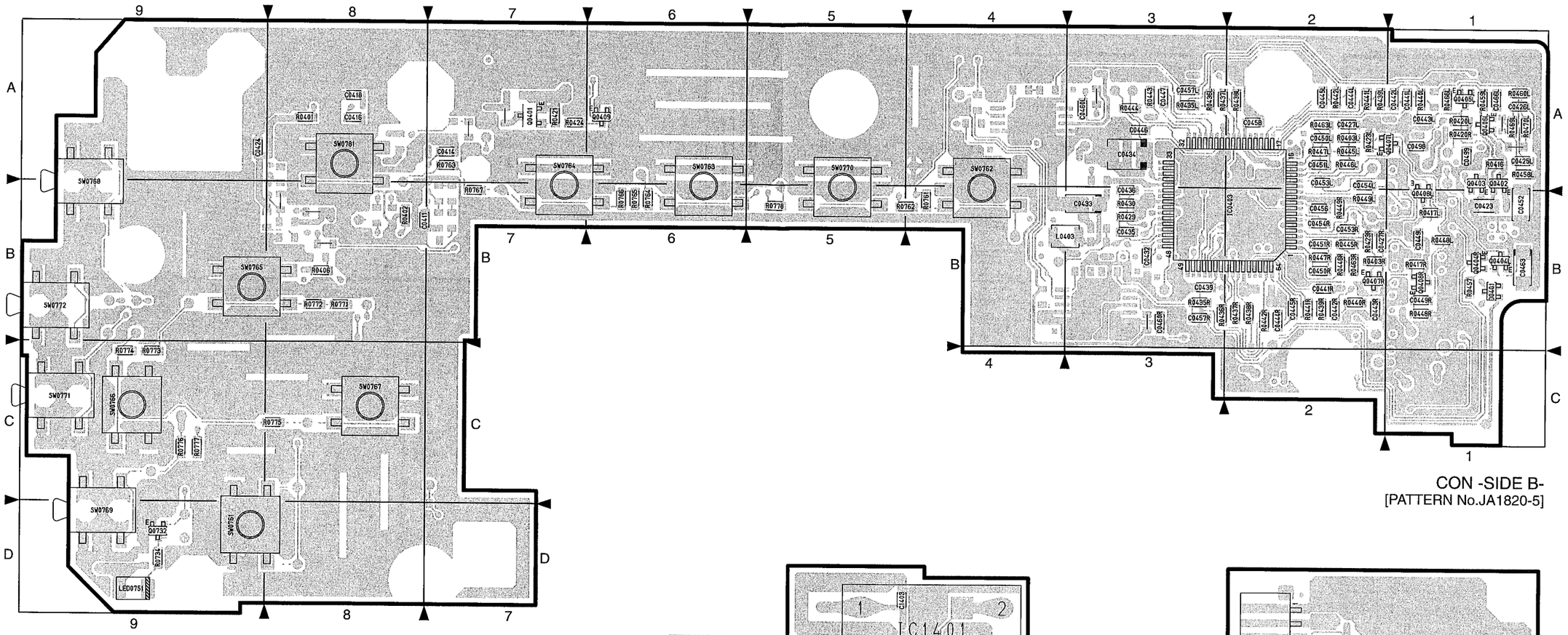
DIFFERENCE TABLE

CON

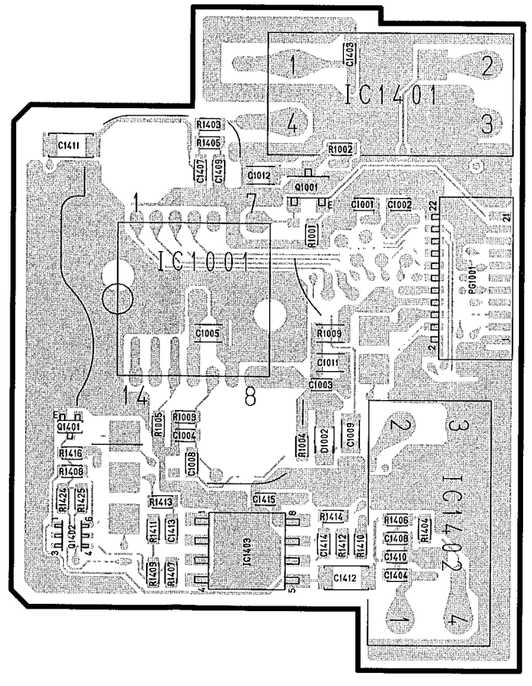
NOTE: This table listes the different components marked with asterisks (*) in the circuit board diagrams.

SYMBOL No.	TYPE 965	TYPE 865	Parts Location
PG0735	13P	4P	A-3B
R0731	JUMPER	×	A-4B
R0732	JUMPER	×	A-4B
R0733	JUMPER	×	A-4A

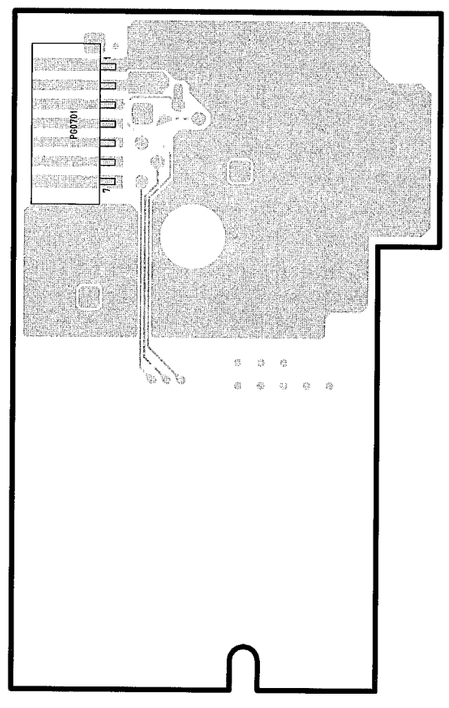
CON, SE, PSW CIRCUIT BOARD DIAGRAMS -SIDE B-



CON -SIDE B-
[PATTERN No.JA1820-5]

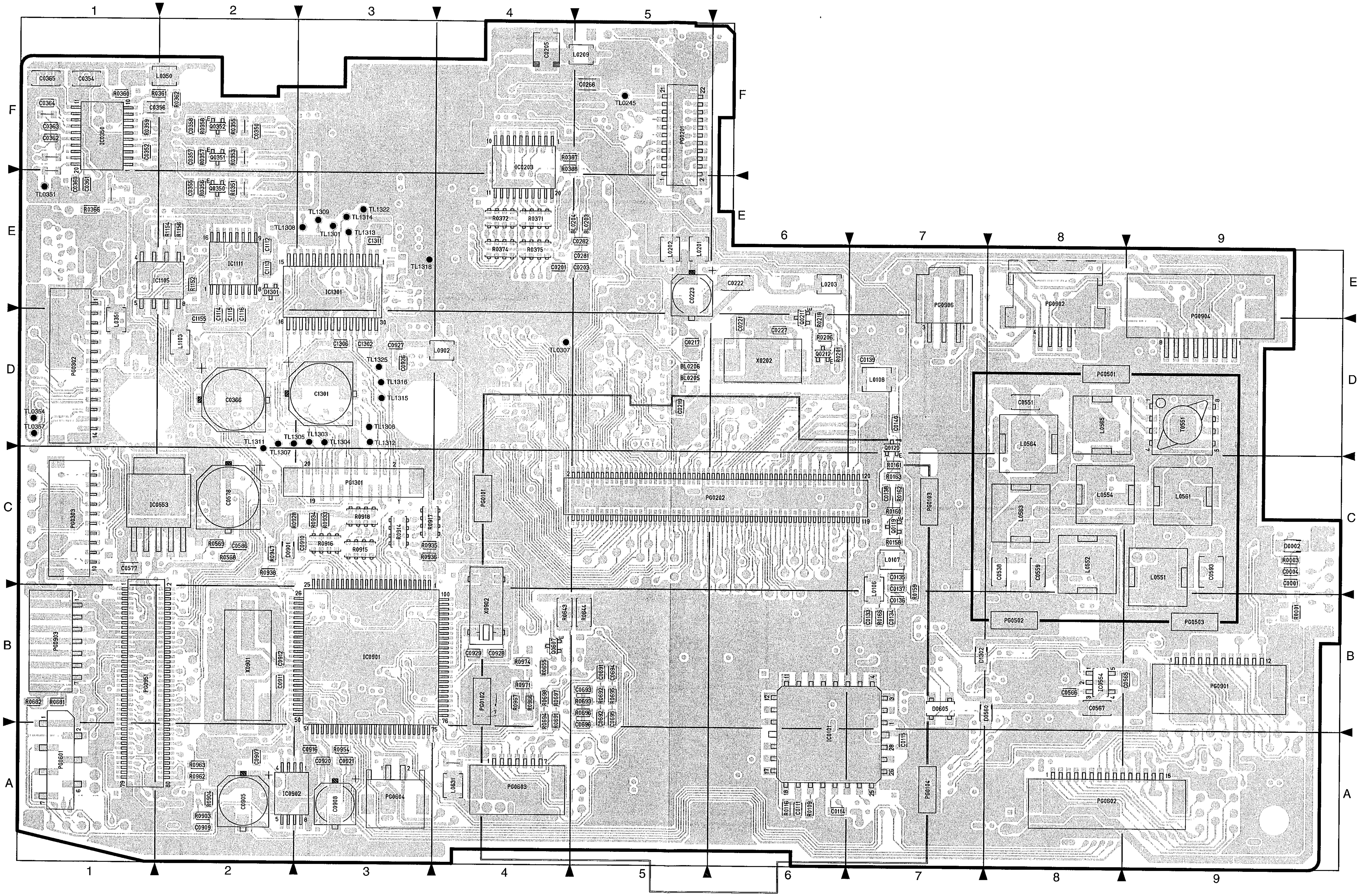


SE -SIDE B-
[PATTERN No.JA1820-5]



PSW -SIDE B-
[PATTERN No.JA1820-5]

VCA CIRCUIT BOARD DIAGRAM -SIDE A-



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2
3
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7
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9
A
B
C
D
E
F
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C0354
L0350
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R0361
R0362
C0364
C0356
C0363
C0362
IC0350
R0359
C0352
C0358
R0358
Q0352
R0355
C0350
C0357
R0357
Q0351
R0353
C0360
C0361
TL0351
C0355
R0356
Q0350
R0351
R0366
TL1309
TL1322
TL1314
TL1308
TL1301
TL1313
C1311
R1154
R1156
IC1111
C1112
C1113
IC1105
R1152
D1301
IC1301
TL1318
L0351
C1155
C1114
C1115
C1116
L1103
C1306
C1302
C0927
L0902
C0926
TL1325
TL1316
TL1315
PG0302
C0366
C1301
TL0354
TL0357
TL1306
TL1305
TL1303
TL1311
TL1304
TL1312
TL1307
PG1301
IC0553
C0578
PG0303
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R0933
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R0947
D0901
C0910
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R0915
R0935
R0936
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Q0119
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PG0102
PG0603
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C0133
R0165
C0134
IC0101
C0115
R0116
C0111
R0109
C0114
D0605
PG0104
PG0902
PG0904
PG0501
C0551
L0565
T0551
L0564
L0554
L0561
L0563
L0552
L0551
C0538
C0559
C0593
D0002
R0003
C0004
C0001
R0001
PG0502
PG0503
D1302
IC0554
C0565
C0566
C0567
D0560
PG0901
PG0602

VCA -SIDE A-
[PATTERN No.JA1820-5]

VCA CIRCUIT BOARD DIAGRAM -SIDE B-

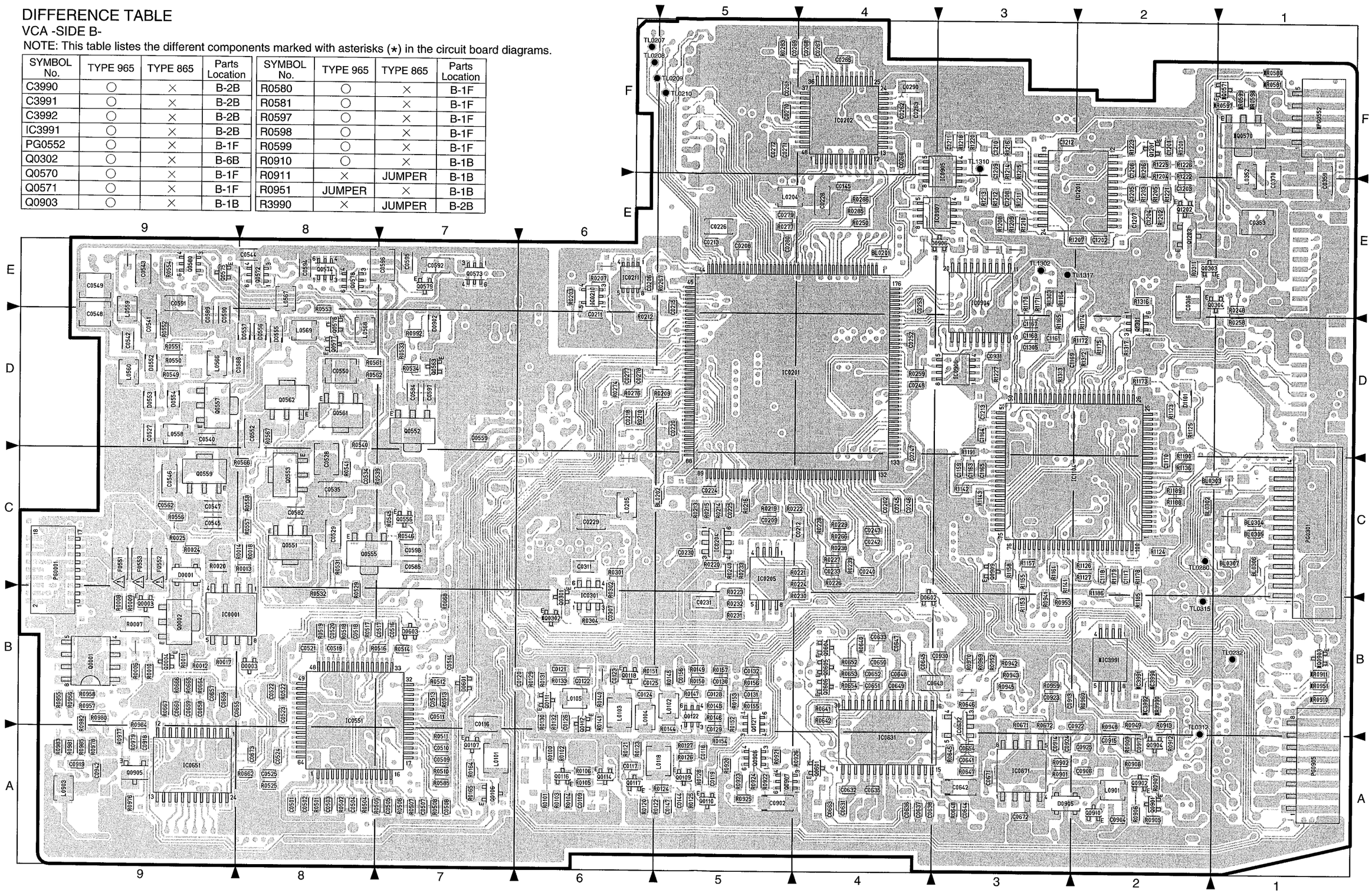
DIFFERENCE TABLE

VCA -SIDE B-

NOTE: This table listes the different components marked with asterisks (*) in the circuit board diagrams.

SYMBOL No.	TYPE 965	TYPE 865	Parts Location
C3990	○	×	B-2B
C3991	○	×	B-2B
C3992	○	×	B-2B
IC3991	○	×	B-2B
PG0552	○	×	B-1F
Q0302	○	×	B-6B
Q0570	○	×	B-1F
Q0571	○	×	B-1F
Q0903	○	×	B-1B

SYMBOL No.	TYPE 965	TYPE 865	Parts Location
R0580	○	×	B-1F
R0581	○	×	B-1F
R0597	○	×	B-1F
R0598	○	×	B-1F
R0599	○	×	B-1F
R0910	○	×	B-1B
R0911	×	JUMPER	B-1B
R0951	JUMPER	×	B-1B
R3990	×	JUMPER	B-2B



IDENTIFICATION OF PARTS LOCATION

VCA

Symbol No	Parts Location
BL	
BL0201	B-4E
BL0202	B-5C
BL0203	A-5E
BL0204	A-4E
BL0205	A-5D
BL0206	A-5D
BL0302	B-2C
BL0303	B-1C
BL0304	B-1C
BL0305	B-1C
BL0306	B-1C
BL0307	B-1C
C	
C0001	A-9C
C0004	A-9C
C0109	B-6A
C0111	A-6A
C0114	A-6A
C0115	A-7A
C0116	B-7B
C0117	B-6A
C0118	B-5A
C0119	B-5A
C0120	B-6B
C0121	B-6B
C0122	B-6B
C0123	B-6B
C0124	B-6B
C0125	B-6B
C0126	B-6B
C0128	B-5B
C0129	B-5B
C0130	B-5B
C0131	B-5B
C0132	B-5B
C0133	A-7B
C0134	A-7B
C0135	A-7C
C0136	A-7B
C0137	A-7C
C0138	A-7C
C0139	A-7D
C0140	A-7D
C0144	B-5A
C0145	B-4E
C0147	B-5A
C0156	B-5B
C0201	A-4E
C0202	B-4C
C0203	A-5E
C0205	A-4F
C0206	B-6E
C0208	B-5E
C0209	B-5C
C0211	B-6D
C0212	B-4C
C0213	B-5E
C0215	B-5E
C0217	A-5D
C0218	B-6D
C0219	A-5D
C0220	B-5D
C0221	A-6D
C0222	A-6E
C0223	A-5E
C0224	B-5C
C0225	B-5C
C0226	B-5E
C0227	A-6D
C0228	B-4E
C0229	B-6C
C0230	B-5C
C0231	B-5B
C0233	B-4C
C0240	B-4C
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C0243	B-4C
C0245	B-4C
C0246	B-4C
C0247	B-4C
C0248	B-4D
C0252	B-4D
C0253	B-4E
C0260	B-4F
C0261	B-5F
C0262	B-4F
C0263	B-4F
C0265	B-4F
C0266	A-5F
C0267	B-4F
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C0272	B-5F
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C0282	A-5E
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C0535	B-8C
C0538	A-8C
C0540	B-9D
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C0925	B-2A
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C0931	B-3D
C0942	B-9A
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C1114	A-2D
C1115	A-2D
C1116	A-2D
C1117	B-2C
C1118	B-2C
C1155	A-2D
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C1205	B-2E
C1206	B-2F
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C1210	B-3F
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C1305	B-3D
C1306	A-3D
C1311	A-3E
C3990	B-2B
C3991	B-2B
C3992	B-2B
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D0002	A-9C
D0003	B-8B
D0552	B-9D
D0553	B-9D
D0554	B-9D
D0555	B-8D
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D0557	B-8D
D0559	B-7D
D0560	A-7B
D0601	B-7B
D0602	B-4B
D0603	B-7B
D0605	A-7B
D0901	A-2C
D0902	B-7D
D0905	B-3A
D0906	B-3E
D1101	B-2D
D1301	A-2E
D1302	A-7B
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F0551	B-9C
F0552	B-9C
F0553	B-9C
IC	
IC0001	B-9B
IC0101	A-6A
IC0201	B-5D
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IC0203	A-4F
IC0204	B-5C
IC0205	B-5C
IC0210	B-6E
IC0211	B-6E
IC0301	B-6B
IC0350	A-1F
IC0551	B-8B
IC0553	A-2C
IC0554	A-8B
IC0631	B-4A
IC0632	B-3B
IC0651	B-9A
IC0671	B-3A
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IC0902	A-2A
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L0103	B-6B
L0104	B-6B
L0105	B-6B
L0106	A-7C
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L0108	A-7D
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L0203	A-6E
L0204	B-5E
L0205	B-6C
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L0551	A-9C
L0552	A-8C
L0554	A-8C
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L0559	B-9D
L0560	B-9D
L0561	A-9C
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PG0102	A-4B
PG0103	A-7C
PG0104	A-7A
PG0201	A-5F
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Q0003	B-9B
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Q0909	B-3C
Q0910	B-2A
Q1201	B-2F
Q1202	B-2E
Q1203	B-2E
Q1301	B-2D
R	
R0001	A-9B
R0003	A-9C
R0006	B-9B
R0007	B-9B
R0008	B-9B
R0009	B-9B
R0010	B-9B
R0011	B-9B
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R0014	B-8C
R0017	B-9B
R0018	B-8C
R0020	B-9C
R0024	B-9C
R0025	B-9C
R0100	B-6A
R0101	B-6A
R0102	B-6A
R0103	B-6A
R0104	B-6A
R0105	B-6A
R0106	B-6A
R0109	A-6A
R0116	A-6A
R0120	B-6A
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R0127	B-5A
R0128	B-5A
R0129	B-6B
R0130	B-6B
R0131	B-6B
R0132	B-6B
R0133	B-6B
R0140	B-6B
R0141	B-6B
R0144	B-5B
R0145	B-5B
R0146	B-5B
R0147	B-5B
R0148	B-5B
R0149	B-5B
R0150	B-5B
R0151	B-6B
R0152	B-5B
R0153	B-5B
R0154	B-5A
R0155	B-5B
R0156	B-5B
R0157	B-5B
R0158	A-7C
R0159	A-7B
R0160	A-7C
R0161	A-7C
R0162	A-7C
R0163	A-7C
R0164	B-7A
R0165	B-7A
R0166	A-7B
R0201	A-6D
R0203	B-6E
R0206	A-6D
R0207	B-6E
R0209	B-5D
R0210	B-6D
R0212	B-6D
R0213	B-5C
R0214	B-5C
R0215	B-5C
R0216	B-5C
R0218	A-6D
R0219	B-5C
R0220	B-5C
R0221	B-4C
R0222	B-4C
R0223	B-5B
R0224	B-4C
R0226	B-4C
R0227	B-4C
R0228	B-4C
R0229	B-4C
R0230	B-4B
R0231	B-5B
R0232	B-5B
R0233	B-5C
R0238	B-4C
R0239	B-4C
R0240	B-5C
R0248	B-1E
R0250	B-4E
R0258	B-1D
R0259	B-4D
R0266	B-4C
R0267	B-5E
R0274	B-6D
R0276	B-6D
R0277	B-5E
R0283	B-5F
R0285	B-4E
R0286	B-4E
R0301	B-6C
R0302	B-6B
R0304	B-6B
R0311	B-2E
R0351	A-2E
R0353	A-2F
R0355	A-2F
R0356	A-2E
R0357	A-2F
R0358	A-2F
R0359	A-1F
R0360	A-1F
R0361	A-1F
R0362	A-2F
R0366	A-1E
R0371	A-4E
R0372	A-4E
R0374	A-4E
R0375	A-4E
R0387	A-4F
R0388	A-4F
R0501	B-8A
R0502	B-8A
R0504	B-8A
R0505	B-7A
R0506	B-7A
R0507	B-7A
R0508	B-7A
R0510	B-7A
R0511	B-7A
R0512	B-7B
R0513	B-7B
R0514	B-7B
R0516	B-7B
R0517	B-8B
R0518	B-8B
R0519	B-8B
R0522	B-8B
R0525	B-8A
R0529	B-8B
R0531	B-8C
R0532	B-8B
R0533	B-7D
R0534	B-7D
R0539	B-7C
R0540	B-8D
R0541	B-8C
R0545	B-7C
R0546	B-7C
R0549	B-9D
R0550	B-9D
R0551	B-9D
R0552	B-9D
R0553	B-8D
R0554	B-9E
R0556	B-9C
R0557	B-8C
R0558	B-8C
R0561	B-8D
R0562	B-8D
R0566	B-8C
R0567	B-8D
R0568	A-2C
R0569	A-2C
R0580	B-1F
R0581	B-1F
R0585	B-7A
R0597	B-1F
R0598	B-1F
R0599	B-1F
R0640	B-4B
R0641	B-4B
R0642	B-4B
R0643	A-4B
R0644	A-5B
R0645	B-3A
R0646	B-3B
R0647	B-3A
R0648	B-3A
R0652	B-4B
R0653	B-4B
R0654	B-4B
R0655	A-4B
R0662	B-8A
R0664	B-9B
R0665	B-9B
R0666	B-9B
R0667	B-9B
R0668	B-7B
R0671	B-3B
R0672	B-3B
R0681	A-1B
R0682	A-1B
R0691	A-4B
R0692	A-5B
R0693	A-5B
R0694	A-4B
R0695	A-5B
R0696	A-5B
R0697	A-4B
R0698	A-4B
R0901	B-3A
R0902	B-3A
R0903	A-2A
R0904	A-2A
R0905	B-2A
R0906	B-2A
R0907	B-2A
R0908	B-2A
R0909	B-2A
R0910	B-1B
R0911	B-1B
R0912	B-2A
R0913	B-2B
R0914	A-3C
R0915	A-3C
R0916	A-3C
R0917	A-3C
R0918	A-3C
R0920	B-5A
R0921	B-5A
R0922	B-5A
R0923	B-5A
R0924	B-5A
R0925	B-5A
R0926	B-4A
R0928	A-2C
R0933	A-3C
R0934	A-3C
R0935	A-3C
R0936	A-3C
R0938	A-2C
R0941	B-3B
R0942	B-3B
R0943	B-3B
R0945	B-3B
R0947	A-2C
R0948	B-2B
R0949	B-2B
R0951	B-1B
R0952	B-3B
R0953	B-3B
R0954	A-3A
R0955	B-9B
R0956	B-9B
R0957	B-9B
R0958	B-9B
R0959	B-3B
R0960	B-2B
R0962	A-2A
R0963	A-2A
R0966	A-4B
R0967	A-4B
R0969	B-3B
R0970	B-3B
R0971	A-4B
R0974	A-4B
R0976	B-9A
R0977	B-9A
R0978	B-9A
R0979	B-9A
R0980	B-9B
R0981	B-9A
R0982	B-9B
R0983	B-9A
R0984	B-9A
R0985	B-9A
R0992	B-7D
R1123	B-2D
R1124	B-2C
R1125	B-2D
R1126	B-2C
R1127	B-2C
R1136	B-2C
R1141	B-3C
R1142	B-3C
R1143	B-3C
R1152	A-2E
R1153	B-3B
R1154	A-2E
R1155	B-3C
R1156	A-2E
R1157	B-3C
R1158	B-3C
R1161	B-3C
R1164	B-3E
R1165	B-3D
R1170	B-3E
R1171	B-3E
R1172	B-2D
R1173	B-2D
R1174	B-2D
R1175	B-2D
R1178	B-2C
R1179	B-2C
R1185	B-2B
R1186	B-2C
R1188	B-2C
R1189	B-2C
R1190	B-2C
R1191	B-3D
R1201	B-2F
R1202	B-2E
R1203	B-2E
R1204	B-2E
R1205	B-2E
R1206	B-2F
R1207	B-2E
R1208	B-3E
R1209	B-3E
R1210	B-3E
R1211	B-3E
R1212	B-3E
R1213	B-3E
R1214	B-3F
R1215	B-3F
R1216	B-3F
R1218	B-3F
R1220	B-3F
R1221	B-2E
R1222	B-2E
R1223	B-2F
R1225	B-2F
R1226	B-2F
R1227	B-3D
R1303	B-3E
R1312	B-2D
R1313	B-3D
R1316	B-2E
R1317	B-2D
R3990	B-2B
T	
T0551	A-9D
TL	
TL0207	B-6F
TL0208	B-6F
TL0209	B-6F
TL0210	B-5F
TL0232	B-1B
TL0245	A-5F
TL0307	A-4D
TL0312	B-2B
TL0315	B-2B
TL0351	A-1E
TL0354	A-1D
TL0357	A-1D
TL1301	A-3E
TL1302	B-3E
TL1303	A-3D
TL1304	A-3D
TL1305	A-2D
TL1306	A-3D
TL1307	A-2D
TL1308	A-3E
TL1309	A-3E
TL1310	B-3F
TL1311	A-2C
TL1312	A-3D
TL1313	A-3E
TL1314	A-3E
TL1315	A-3D
TL1316	A-3D
TL1317	B-3E
TL1318	A-3E
TL1322	A-3E
TL1325	A-3D
X	
X0202	A-6D
X0901	A-2B
X0902	A-4B

LCD

Symbol No	Parts Location
C	
C5314	2A
C5315	1B
C5319	1A
C5320	2B
C5501	4C
C5502	4B
C5503	4B
C5504	4B
C5505	4B
C5507	3B
C5509	2B
C5510	2B
C5511	2A
C5512	2A
C5513	3A
C5524	4A
D	
D5301	1B
IC	
IC5501	4B
L	
L5301	2A
L5302	1A
L5303	2A
L5304	2A
L5501	3B
L5502	2B
L5503	2A
PG	
PG5302	2B
PG5303	1A
PG5501	4A
PG5701	3B
Q	
Q5303	3B
Q5304	3B
Q5305	4C
Q5306	3B
Q5307	3B
Q5501	4C
Q5502	4B
Q5505	4B
Q5506	4B
Q5510	2B
Q5511	2B
Q5512	3A
Q5513	2A
R	
R5307	4C
R5308	4C
R5330	2B
R5332	1B
R5334	3B
R5339	3B
R5340	3B
R5502	4B
R5503	4B

Symbol No	Parts Location
R5504	4B
R5505	4B
R5506	4B
R5508	4B
R5509	4B
R5510	4B
R5511	4B
R5522	2B
R5523	2B
R5524	2B
R5525	3A
SW	
SW5302	1A
SW5305	1B
T	
T5501	3A

CEVF

Symbol No	Parts Location
C	
C3803	B-1B
C3804	B-2A
C3805	B-2A
C3806	B-2A
C3807	B-2B
C3808	B-2B
C3809	B-2B
C3810	B-2B
C3811	B-2B
C3812	B-2B
C3813	B-2B
C3814	B-2B
C3819	B-2A
C3820	B-2A
C3821	B-2A
C3822	B-2A
C3823	B-2A
C3824	B-3B
C3827	B-1B
C3829	B-2B
C3830	B-2A
C3831	B-1A
C3832	B-3A
IC	
IC3801	B-2A
IC3802	B-2A
IC3803	B-1A
L	
L3801	A-1A
L3802	B-1A
L3803	B-1B
L3804	B-1A
PG	
PG3801	A-2A
PG3802	A-1A
Q	
Q3801	B-1A
Q3802	A-1A
Q3803	A-1A
Q3804	B-1A
Q3805	B-1A
Q3807	B-3B
Q3808	B-3A
Q3809	B-3A
Q3810	B-3B
Q3811	B-3A
Q3812	B-3A
Q3813	B-3A
Q3814	B-1A
R	
R3801	B-1A
R3802	B-1A
R3803	B-1A
R3805	B-2A
R3809	A-3B
R3810	A-3B
R3811	A-3A

Symbol No	Parts Location
R3812	B-3A
R3813	B-3A
R3814	A-1A
R3815	A-1A
R3816	B-1A
R3817	B-1A
R3830	B-1A
R3841	A-2A
R3842	A-2A
R3843	A-2A
R3851	B-2A
R3861	B-3A
R3862	B-3A
R3863	B-3A
R3864	B-3A
R3866	B-3A
R3867	B-3A
R3868	B-3A
R3869	B-3A
R3871	B-3A
R3872	B-3A

CON

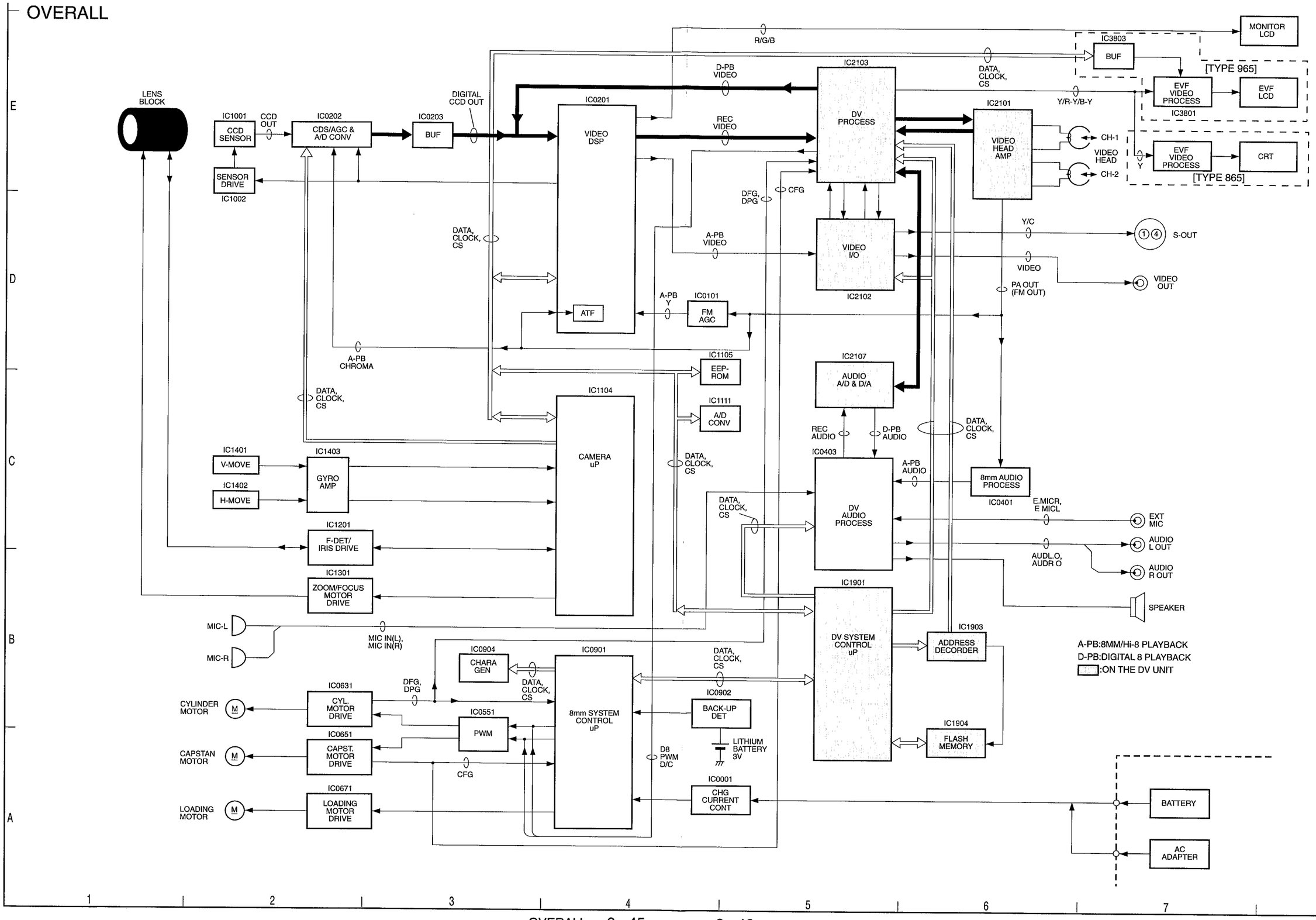
Symbol No	Parts Location
C	
C0401	A-7A
C0402	A-2A
C0403	A-1A
C0405	A-8B
C0408	A-8B
C0409	A-8B
C0410	A-7B
C0411	B-8B
C0414	B-7A
C0415	A-7A
C0416	B-8A
C0417	A-8A
C0418	B-8A
C0419	A-8A
C0420	A-8A
C0421	A-8A
C0422	A-8A
C0423	B-1B
C0424	B-9A
C0425L	B-1A
C0425R	A-2B
C0426L	B-1A
C0426R	A-2B
C0427L	B-2A
C0427R	B-2B
C0428	A-2A
C0429	A-2A
C0430L	A-2B
C0430R	A-3B
C0432	B-3B
C0433	B-3B
C0434	B-3A
C0435	B-3B
C0436	B-3B
C0437	A-2B
C0438	A-2B
C0439	B-3B
C0441L	B-1A
C0441R	B-2B
C0442L	B-1A
C0442R	B-2B
C0443L	B-1A
C0443R	B-2B
C0444L	B-2A
C0444R	B-2B
C0445L	B-2A
C0445R	B-2B
C0446	B-3A
C0447	B-3A
C0448	A-3A
C0449L	B-1B
C0449R	B-1B
C0450L	B-2A
C0450R	B-2B
C0451L	B-2A
C0451R	B-2B
C0452	B-1B

Symbol No	Parts Location
C0453L	B-2A
C0453R	B-2B
C0454L	B-2A
C0454R	B-2B
C0455	A-3A
C0456	B-2B
C0457L	B-3A
C0457R	B-3B
C0458	B-2A
C0460L	B-3A
C0460R	B-3B
C0463	B-1B
C0465L	A-2A
C0465R	A-2A
C0466L	B-1A
C0466R	A-2B
C0498	B-1A
C0499	B-1A
C0736	A-3B
C0737	A-3A
C0757	A-3A
D	
D0401	B-1B
IC	
IC0401	A-8A
IC0403	B-2B
JK	
JK0741	A-9A
L	
L0401	A-7A
L0402	A-1A
L0403	B-3B
L0404	A-2A
L0732	A-3A
LED	
LED0751	B-9D
PG	
PG0401	A-1A
PG0402	A-2B
PG0731	A-1B
PG0735	A-3B
PG0736	A-1B
PG0741	A-9B
Q	
Q0401	B-7A
Q0402	B-1A
Q0403	B-1A
Q0404L	B-1B
Q0404R	B-1B
Q0405L	B-1A
Q0405R	A-2B
Q0406L	B-1A
Q0406R	A-2B
Q0407L	B-1A
Q0407R	B-2B
Q0408L	B-1B
Q0408R	B-1B
Q0409	B-6A

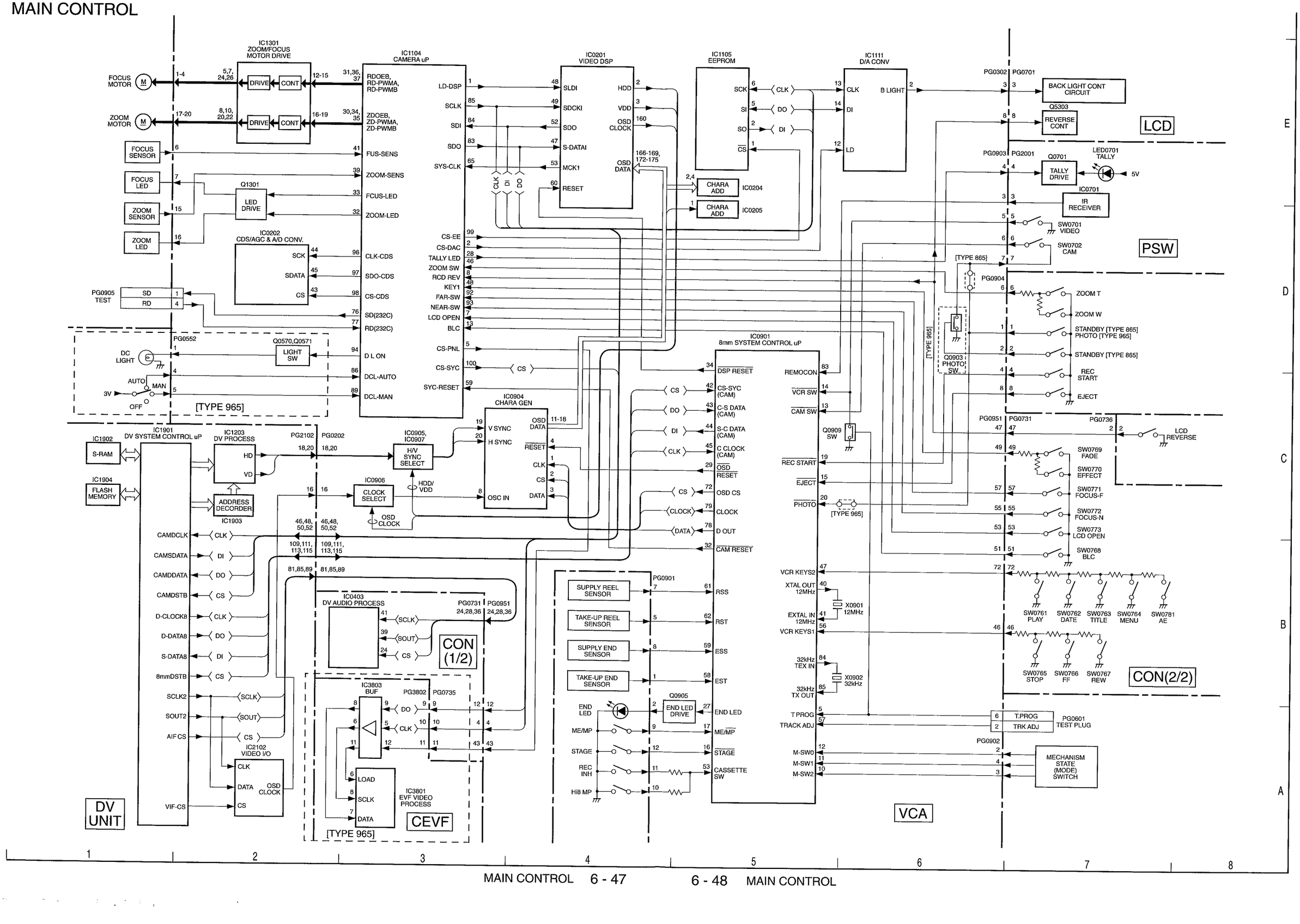
Symbol No	Parts Location
Q0732	B-9D
R	
R0401	B-8A
R0402	B-8B
R0403L	B-2A
R0403R	B-2B
R0406	B-8B
R0416	B-1A
R0417L	B-1B
R0417R	B-1B
R0420L	B-1A
R0420R	B-1A
R0421	B-7A
R0423L	B-2A
R0423R	B-2B
R0424	B-7A
R0429	B-3B
R0430	B-3B
R0431	A-3B
R0432	A-3B
R0433	A-3B
R0434	A-3A
R0435L	B-3A
R0435R	B-3B
R0436L	B-3A
R0436R	B-3B
R0437L	B-3A
R0437R	B-2B
R0438L	B-2A
R0438R	B-2B
R0439L	B-2A
R0439R	B-2B
R0440L	B-1A
R0440R	B-2B
R0441L	B-2A
R0441R	B-2B
R0442L	B-2A
R0442R	B-2B
R0443	B-3A
R0444	B-3A
R0445L	B-2A
R0445R	B-2B
R0446L	B-2A
R0446R	B-2B
R0447L	B-2A
R0447R	B-2B
R0448L	B-1B
R0448R	B-1B
R0449L	B-2B
R0449R	B-2B
R0453	A-3A
R0457	B-1B
R0458L	B-1A
R0458R	A-2B
R0459L	B-1A
R0459R	A-2B
R0460L	B-1A
R0460R	A-2B

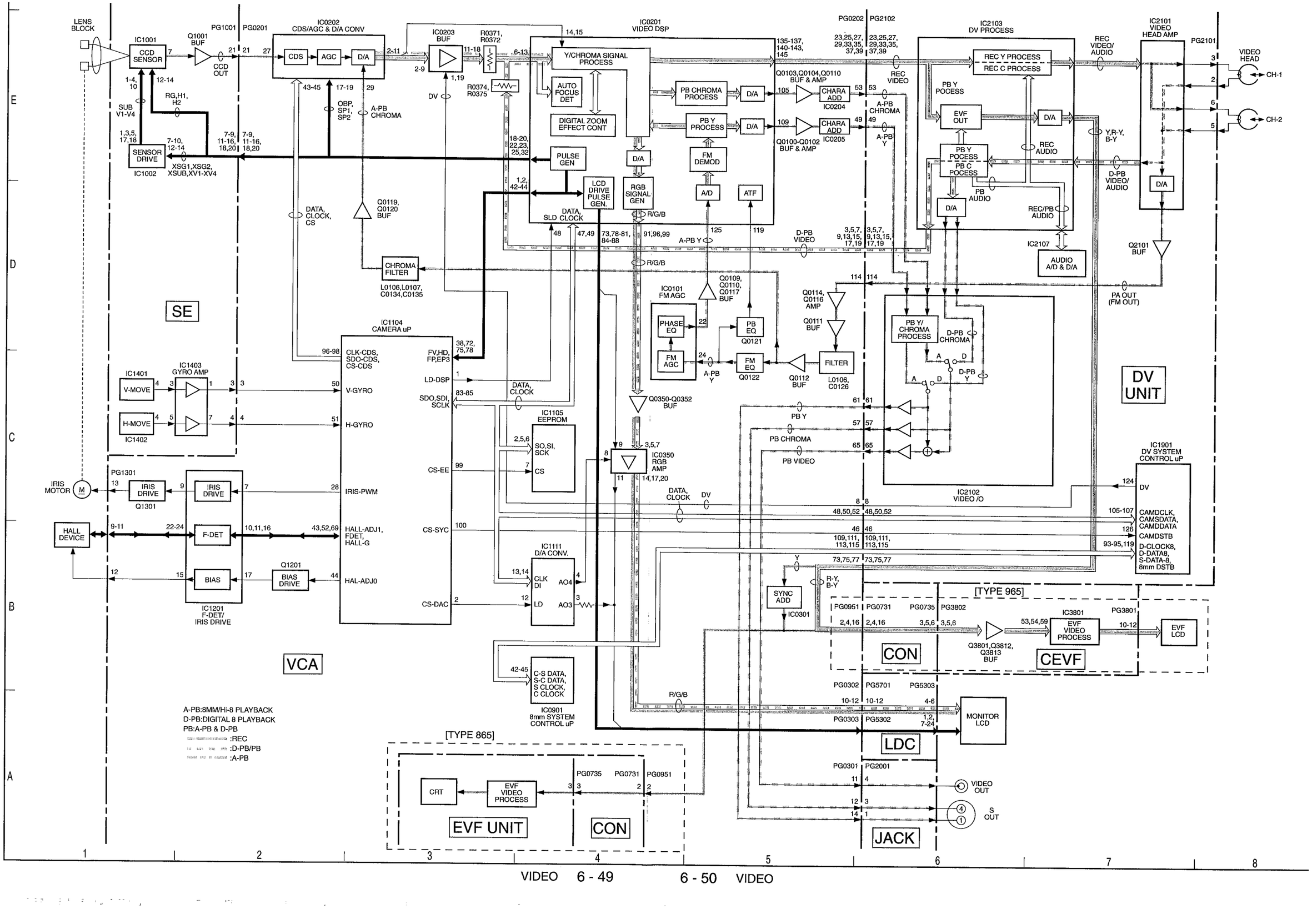
Symbol No	Parts Location
R0463L	B-2A
R0463R	B-2B
R0466L	B-1A
R0466R	A-2B
R0469L	B-1A
R0469R	A-2B
R0470L	B-1A
R0470R	A-2B
R0731	A-4B
R0732	A-4B
R0733	A-4A
R0734	B-9D
R0761	B-4B
R0762	B-4B
R0763	B-7A
R0764	B-6B
R0765	B-6B
R0766	B-6B
R0767	B-7B
R0771	B-8B
R0772	B-8B
R0773	B-9C
R0774	B-9C
R0775	B-8C
R0776	B-9C
R0777	B-9C
R0778	B-5B
SW	
SW0761	B-9D
SW0762	B-4B
SW0763	B-6B
SW0764	B-7B
SW0765	B-9B
SW0766	B-9C
SW0767	B-8C
SW0768	B-9B
SW0769	B-9D
SW0770	B-5B
SW0771	B-9C
SW0772	B-9B
SW0773	A-7D
SW0781	B-8A

BLOCK DIAGRAM
OVERALL

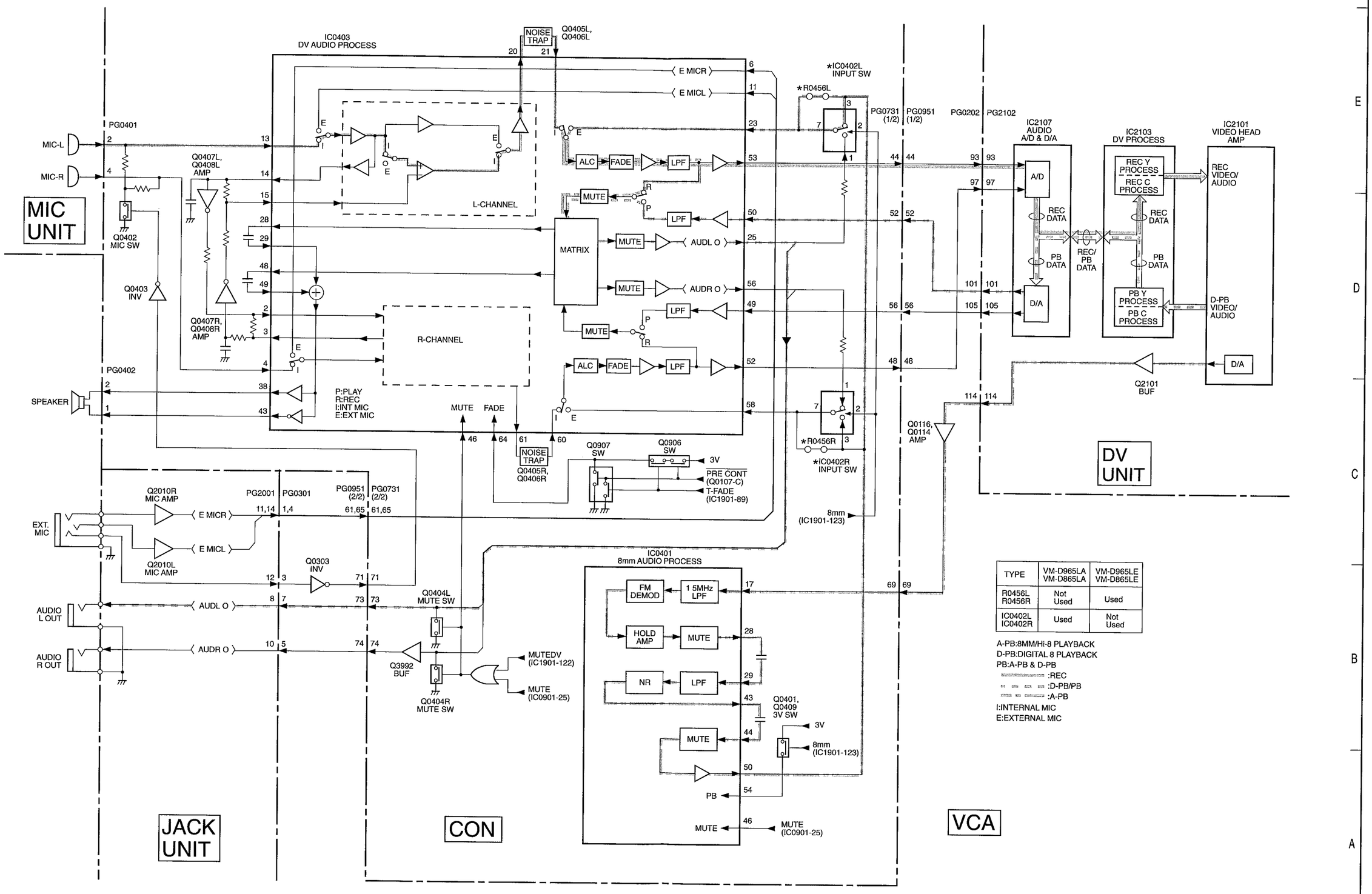


MAIN CONTROL




LENS BLOCK
IC1001
CCD SENSOR
Q1001 BUF
CCD OUT
PG1001
PG0201
IC0202 CDS/AGC & D/A CONV
CDS
AGC
D/A
IC0203 BUF
R0371, R0372
R0374, R0375
DV
IC0201 VIDEO DSP
Y/CHROMA SIGNAL PROCESS
AUTO FOCUS DET
DIGITAL ZOOM EFFECT CONT
PULSE GEN
LCD DRIVE PULSE GEN.
RGB SIGNAL GEN
FM DEMOD
A/D
ATF
PB CHROMA PROCESS
PB Y PROCESS
Q0103,Q0104,Q0110 BUF & AMP
Q0100-Q0102 BUF & AMP
IC0204
IC0205
CHARA ADD
PG0202
PG2102
REC VIDEO
A-PB CHROMA
A-PB Y
IC2103 DV PROCESS
REC Y PROCESS
REC C PROCESS
PB Y POCESS
EVF OUT
PB Y POCESS
PB C POCESS
PB AUDIO
REC/PB AUDIO
REC AUDIO
Y,R-Y, B-Y
D-PB VIDEO/ AUDIO
REC VIDEO/ AUDIO
IC2101 VIDEO HEAD AMP
PG2101
VIDEO HEAD
CH-1
CH-2
IC2107
AUDIO A/D & D/A
Q2101 BUF
PA OUT (FM OUT)
SUB V1-V4
RG,H1, H2
SENSOR DRIVE
IC1002
XSG1,XSG2, XSUB,XV1-XV4
OBP, SP1, SP2
DATA, CLOCK, CS
DATA, SLD CLOCK
Q0119, Q0120 BUF
CHROMA FILTER
L0106,L0107, C0134,C0135
R/G/B
D-PB VIDEO
SE
IC0101 FM AGC
PHASE EQ
FM AGC
PB EQ Q0121
FM EQ Q0122
Q0109, Q0110, Q0117 BUF
Q0111 BUF
Q0114, Q0116 AMP
FILTER
L0106, C0126
Q0112 BUF
PB Y/ CHROMA PROCESS
D-PB CHROMA
D-PB Y
DV UNIT
IC1104 CAMERA uP
CLK-CDS, SDO-CDS, CS-CDS
FV,HD, FP,EP3
LD-DSP
SDO,SDI, SCLK
DATA, CLOCK
IC1105 EEPROM
SO,SI, SCK
CS
IC1401
V-MOVE
IC1402
H-MOVE
IC1403 GYRO AMP
V-GYRO
H-GYRO
Q0350-Q0352 BUF
IC0350 RGB AMP
CS-EE
CS-SYC
CS-DAC
IC1111 D/A CONV.
CLK DI
LD
AO4
AO3
IC1901 DV SYSTEM CONTROL uP
DV
CAMDCLK, CAMSDATA, CAMDDATA
CAMDSTB
D-CLOCK8, D-DATA8, S-DATA-8, 8mm DSTB
IC2102 VIDEO I/O
PB Y
PB CHROMA
PB VIDEO
IRIS MOTOR
PG1301
IRIS DRIVE
Q1301
IRIS-PWM
HALL DEVICE
F-DET
BIAS
Q1201
BIAS DRIVE
HALL-ADJ1, FDET, HALL-G
HAL-ADJ0
IC1201 F-DET/ IRIS DRIVE
VCA
SYNC ADD
IC0301
Y
R-Y, B-Y
[TYPE 965]
IC3801 EVF VIDEO PROCESS
EVF LCD
Q3801,Q3812, Q3813 BUF
CON
CEVF
C-S DATA, S-C DATA, S CLOCK, C CLOCK
IC0901 8mm SYSTEM CONTROL uP
R/G/B
MONITOR LCD
LDC
[TYPE 865]
CRT
EVF VIDEO PROCESS
EVF UNIT
CON
VIDEO OUT
S OUT
JACK
A-PB:8MM/Hi-8 PLAYBACK
D-PB:DIGITAL 8 PLAYBACK
PB:A-PB & D-PB
:REC
:D-PB/PB
:A-PB

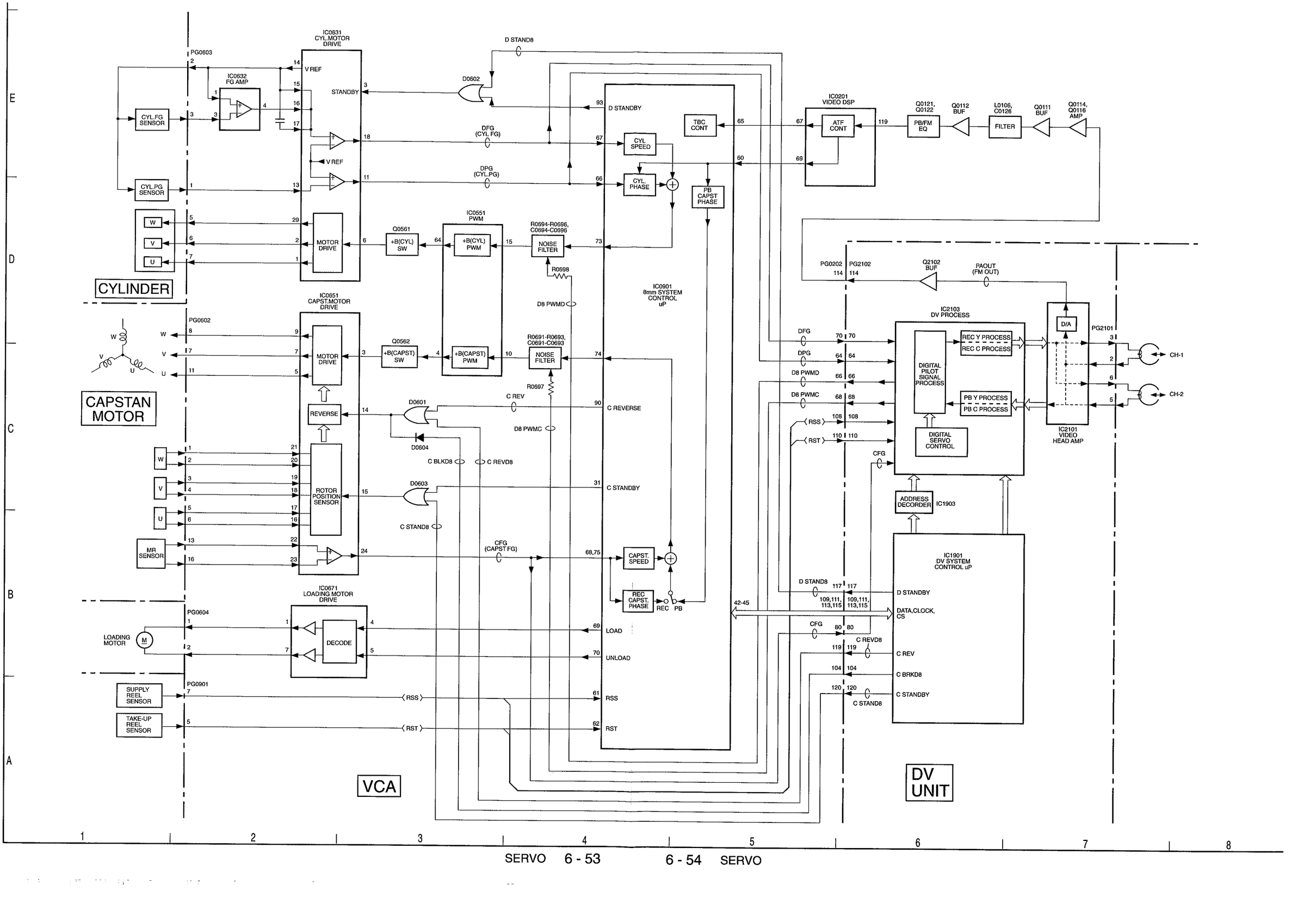
AUDIO



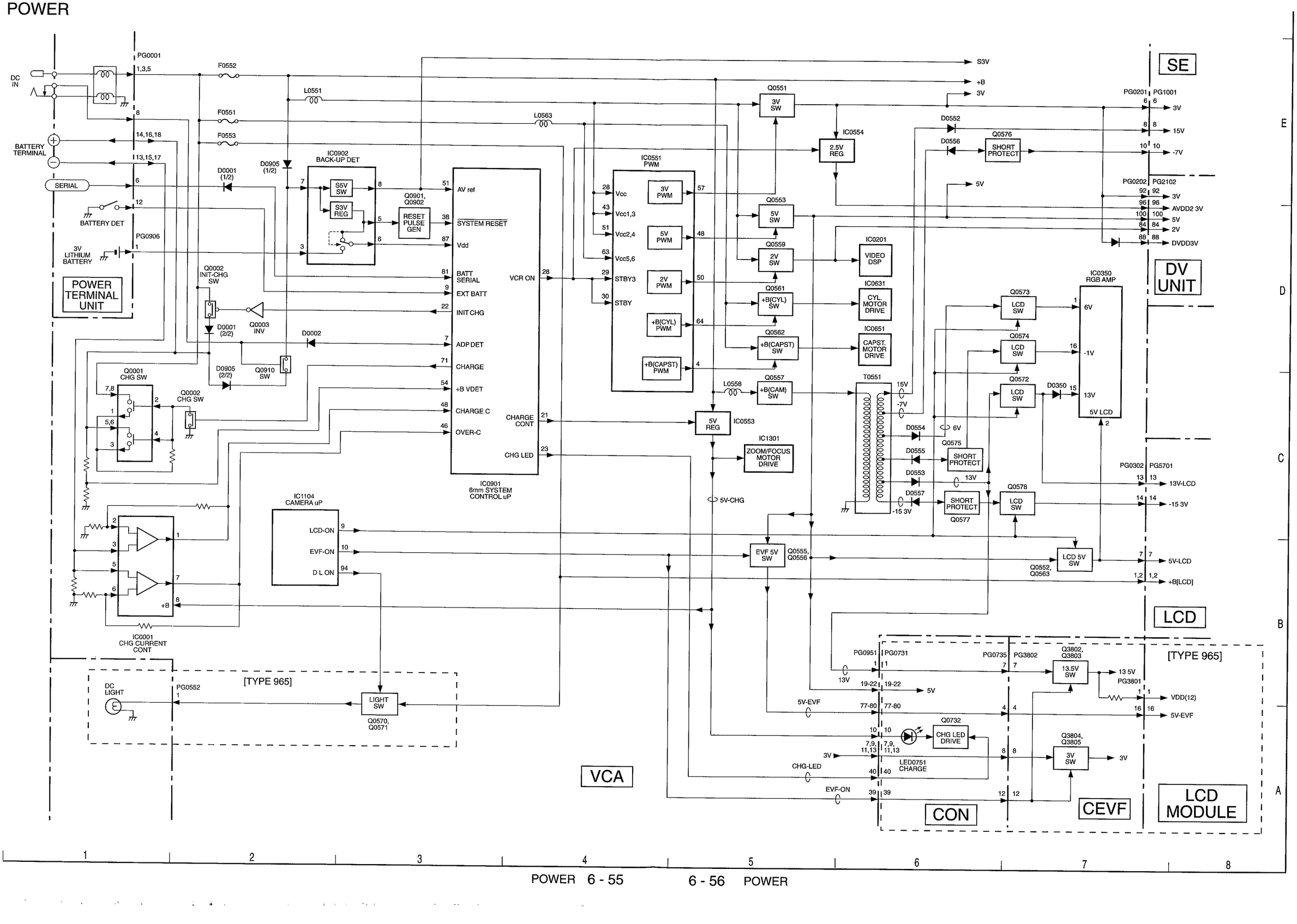
TYPE	VM-D965LA VM-D865LA	VM-D965LE VM-D865LE
R0456L R0456R	Not Used	Used
IC0402L IC0402R	Used	Not Used

A-PB:8MM/Hi-8 PLAYBACK
D-PB:DIGITAL 8 PLAYBACK
PB:A-PB & D-PB
:REC
:D-PB/PB
:A-PB
I:INTERNAL MIC
E:EXTERNAL MIC

SERVO


IC0631 CYL.MOTOR DRIVE
PG0603
IC0632 FG AMP
CYL.FG SENSOR
CYL.PG SENSOR
V REF
STANDBY
D STAND8
D0602
D STANDBY
DFG (CYL FG)
DPG (CYL.PG)
CYL SPEED
CYL. PHASE
TBC CONT
PB CAPST PHASE
IC0201 VIDEO DSP
ATF CONT
Q0121, Q0122
PB/FM EQ
Q0112 BUF
L0106, C0126
FILTER
Q0111 BUF
Q0114, Q0116 AMP
W
V
U
CYLINDER
MOTOR DRIVE
Q0561
+B(CYL) SW
IC0551 PWM
+B(CYL) PWM
R0694-R0696, C0694-C0696
NOISE FILTER
R0698
D8 PWMD
IC0901 8mm SYSTEM CONTROL uP
PG0202
PG2102
Q2102 BUF
PAOUT (FM OUT)
IC2103 DV PROCESS
D/A
PG2101
CH-1
CH-2
DIGITAL PILOT SIGNAL PROCESS
REC Y PROCESS
REC C PROCESS
PB Y PROCESS
PB C PROCESS
IC2101 VIDEO HEAD AMP
DFG
DPG
D8 PWMD
D8 PWMC
RSS
RST
DIGITAL SERVO CONTROL
CFG
IC0651 CAPST.MOTOR DRIVE
PG0602
CAPSTAN MOTOR
Q0562
+B(CAPST) SW
+B(CAPST) PWM
R0691-R0693, C0691-C0693
NOISE FILTER
R0697
C REV
D0601
REVERSE
C REVERSE
D8 PWMC
D0604
C BLKD8
C REVD8
ROTOR POSITION SENSOR
D0603
C STANDBY
C STAND8
MR SENSOR
CFG (CAPST FG)
CAPST. SPEED
REC CAPST. PHASE
REC
PB
ADDRESS DECORDER
IC1903
IC1901 DV SYSTEM CONTROL uP
D STAND8
D STANDBY
DATA,CLOCK, CS
C REVD8
C REV
C BRKD8
C STANDBY
C STAND8
IC0671 LOADING MOTOR DRIVE
PG0604
LOADING MOTOR
DECODE
LOAD
UNLOAD
PG0901
SUPPLY REEL SENSOR
TAKE-UP REEL SENSOR
RSS
RST
VCA
DV UNIT

POWER


DC IN
BATTERY TERMINAL
SERIAL
BATTERY DET
3V LITHIUM BATTERY
POWER TERMINAL UNIT
PG0001
PG0906
F0552
F0551
F0553
L0551
L0563
D0001 (1/2)
D0001 (2/2)
D0905 (1/2)
D0905 (2/2)
D0002
Q0002 INIT-CHG SW
Q0003 INV
Q0910 SW
Q0001 CHG SW
Q0002 CHG SW
IC0902 BACK-UP DET
S5V SW
S3V REG
Q0901, Q0902
RESET PULSE GEN
IC0901 8mm SYSTEM CONTROL uP
AV ref
SYSTEM RESET
Vdd
BATT SERIAL
EXT BATT
INIT CHG
ADP DET
CHARGE
+B VDET
CHARGE C
OVER-C
VCR ON
CHARGE CONT
CHG LED
IC0551 PWM
Vcc
Vcc1,3
Vcc2,4
Vcc5,6
STBY3
STBY
3V PWM
5V PWM
2V PWM
+B(CYL) PWM
+B(CAPST) PWM
IC0554 2.5V REG
Q0551 3V SW
Q0553 5V SW
Q0559 2V SW
Q0561 +B(CYL) SW
Q0562 +B(CAPST) SW
Q0557 +B(CAM) SW
L0558
IC0553 5V REG
5V-CHG
IC1301 ZOOM/FOCUS MOTOR DRIVE
T0551
D0552
D0556
Q0576 SHORT PROTECT
IC0201 VIDEO DSP
IC0631 CYL. MOTOR DRIVE
IC0651 CAPST. MOTOR DRIVE
IC0350 RGB AMP
Q0573 LCD SW
Q0574 LCD SW
Q0572 LCD SW
D0350
D0554
D0555
D0553
D0557
Q0575 SHORT PROTECT
Q0577 SHORT PROTECT
Q0578 LCD SW
IC1104 CAMERA uP
LCD-ON
EVF-ON
D L ON
IC0001 CHG CURRENT CONT
EVF 5V SW
Q0555, Q0556
LCD 5V SW
Q0552, Q0563
LIGHT SW
Q0570, Q0571
[TYPE 965]
DC LIGHT
PG0552
PG0951
PG0731
PG0735
PG3802
Q3802, Q3803 13.5V SW
PG3801
Q0732 CHG LED DRIVE
LED0751 CHARGE
Q3804, Q3805 3V SW
CHG-LED
EVF-ON
5V-EVF
S3V
+B
3V
5V
SE
DV UNIT
LCD
CEVF
CON
LCD MODULE
VCA
PG0201
PG1001
PG0202
PG2102
PG0302
PG5701
15V
-7V
6V
13V
5V LCD
-15 3V
13V-LCD
-15 3V
5V-LCD
+B[LCD]
AVDD2 3V
2V
DVDD3V
VDD(12)
13 5V

MICROPROCESSOR PIN FUNCTION TABLES

1. Camera Microprocessor (IC1104)

Pin No.	I/O	Active Level	Abbreviation	Function
1	O	(Pulse)	LD-DSP	Activates data communications with IC0201 (VIDEO DSP).
2	O	(Pulse)	CS-DAC	Activates data communications with IC1111 (D/A CONV.).
3	-----	-----	----------	Not used. Open.
4	O	Hi	GYRO-RST	Drives Q1402 (GYRO RESET) via Q1401 (INV.) to reset IC1401 (V-MOVE) and IC1402 (H-MOVE).
5	O	(Pulse)	CS-PNL	Activates data communications with IC3801 (EVF VIDEO PROCESS).
6	O	Hi/Lo	CVF-ADJ	Color electronic viewfinder adjustment control output. Hi: Adjusting, Lo: Normal
7	I	Hi/Lo	LCD-OPEN	Input to discriminate whether of LCD monitor is opened or closed. Hi: Close, Lo: Open.
8	I	Hi/Lo	LCD-REV	Input to discriminate whether of LCD monitor is turned over.
9	O	Hi	LCD-ON	LCD power control output. Outputs "Hi" when power is turned on.
10	O	Hi	EVF-ON	Electronic viewfinder (EVF) power control output. Outputs "Hi" when power is turned on.
11	-----	-----	----------	Not used. Open.
12	-----	-----	VCC(3V)	3V power input.
13	I	Lo	BLC	BLC switch detection inputs.
14	-----	-----	GND	Grounded.
15	-----	-----	----------	Not used. Connect to ground.
16	-----	-----	----------	
17	-----	-----	----------	
18	-----	-----	----------	
19	-----	-----	----------	
20	-----	-----	----------	Not used. Open.
21	-----	-----	----------	
22	-----	-----	----------	
23	-----	-----	----------	
24	-----	-----	----------	
25	-----	-----	----------	
26	O	Lo	TALLY LED	Drives LED701 (TALLY) via Q0701 (TALLY DRIVE) to turn on during recording.
27	-----	-----	----------	Not used. Open.
28	-----	(Pulse)	IRIS PWM	Iris motor drive output .
29	-----	-----	----------	Not used. Open.
30	O	(Pulse)	ZDOEB	Activates zoom drive data communications with IC1301 (ZOOM/FOCUS MOTOR DRIVE).
31	O	(Pulse)	RDOEB	Activates focus drive data communications with IC1301 (ZOOM/FOCUS MOTOR DRIVE).
32	O	(Pulse)	ZOOM-LED	Output pulses to drive the ZOOM LED in the lens block.
33	O	(Pulse)	FCUS-LED	Output pulses to drive the FOCUS LED in the lens block.
34	O	PWM	ZD-PWMB	Outputs zoom motor drive signal to IC1301 (ZOOM/FOCUS MOTOR DRIVE).
35	O	PWM	ZD-PWMA	
36	O	PWM	RD-PWMB	Outputs focus motor drive signal to IC1301 (ZOOM/FOCUS MOTOR DRIVE).
37	O	PWM	RD-PWMA	
38	I	(Pulse)	FV	Receives the vertical sync pulses that detect the iris detection area, from IC0201 (VIDEO DSP).
39	I	(Pulse)	ZOM-SENS	Zoom motor position detection input.
40	-----	-----	----------	Not used. Connect to ground.
41	I	(Pulse)	FUS-SENS	Focus motor position detection input.
42	-----	-----	GND	Grounded
43	O	0V-5V	HAL-ADJ1	Controls the offset voltage of IC1201 (F-DET/IRIS DRIVE).
44	O	0V-5V	HAL-ADJ0	Drives bias generator in IC1201 (F-DET/IRIS DRIVE) via Q1201 (BIAS DRIVE) to control the bias voltage of the Hall devices.
45	-----	-----	----------	Not used. Open.
46	I	0V-5V	ZOOM-SW	Zoom (TELE/WIDE) switch detection inputs.
47	I	0V-3V	KEY2	Not used. Connect to ground.
48	I	0V-3V	KEY1	Operation switch detection input (FADE and D.EFFECTS swatches)
49	I	0V-3V	TEMP-ADJ	Temperature change detection input. Detects variations in the forward voltage at the connected diode to correct the back-focus.
50	I	0V-3V	V-GYRO	Receives vertical camera shake correction data from IC1401 (V-MOVE) via IC1403 (GYRO AMP).

Pin No.	I/O	Active Level	Abbreviation	Function
51	I	0V-3V	H-GYRO	Receives horizontal camera shake correction data from IC1402 (H-MOVE) via IC1403 (GYRO AMP).
52	I	0V-3V	FDET	F-value detection input. Receives the F.DET voltage detected by IC1201 (F-DET/ IRIS DRIVE) and compares this with the reference voltage input via pin 53 to detect the F-value.
53	-----	-----	AVCC	Reference 3V power input.
54	-----	-----	AVCC	A/D reference voltage input (connected to 3V power supply).
55	-----	-----	VCC	3V power input.
56	-----	-----	VCC	
57	-----	-----	----------	Not used. Open.
58	-----	-----	----------	
59	I	Lo	SYS-REST	Reset signal input from IC0901 (8mm SYSTEM CONTROL μP).
60	-----	-----	VCC	3V power input.
61	-----	-----	STBY	Not used. Connect to 3V power supply.
62	-----	-----	VCC	3V power input.
63	-----	-----	----------	Not used. Open.
64	-----	-----	GND	Grounded.
65	I	(Pulse)	SYS-CLOCK	Inputs control clock pulses from IC0201 (VIDEO DSP).
66	-----	-----	FWE	Not used. Connected to ground.
67	-----	-----	MD2	Not used. Connect to 3V power supply.
68	-----	-----	----------	Not used. Open.
69	O	Hi	HALL-G	Controls the amplification (gain of Hall device) of IC1201 (F-DET/IRIS DRIVE).
70	-----	-----	----------	Not used. Open.
71	-----	-----	----------	
72	I	(Pulse)	HD	Input horizontal sync pulse from IC0201 (VIDEO DSP).
73	-----	-----	----------	Not used. Open.
74	-----	-----	----------	
75	I	(Pulse)	FP	Input field discrimination pulse from IC0201 (VIDEO DSP).
76	O	(Pulse)	SD (232C)	Used for initial settings and adjustment. For data communications with personal computer.
77	I	(Pulse)	RD (232C)	
78	I	(Pulse)	EP3/AFLH	Receives pulses which discriminate the iris detection area.
79	-----	-----	----------	Not used. Open.
80	-----	-----	----------	
81	-----	-----	----------	
82	-----	-----	----------	
83	O	(Pulse)	SDO	For data communications with IC0201 (VIDEO DSP), IC1105 (EEPROM), IC1111 (D/A CONV.) and DV circuit board (IC1901(DV SYSTEM CONTROL μP)) .
84	I	(Pulse)	SDI	
85	O	(Pulse)	SCLK	
86	I	Hi	DCL-AUTO	Input to detect the AUTO position of DC light switch. If IC1104 detects the AUTO position (Hi), it switches the voltage at pin 94 according to the surrounding brightness.
87	-----	-----	----------	Not used. Open.
88	-----	-----	----------	Not used. Connected to ground.
89	-----	-----	DCL-MAN	Input to detect the ON position of DC light switch. If IC1104 detects the ON position (Hi), it sets the voltage at pin 94 to "HI".
90	I	Hi	PB-HIBAD	Playback mode detection input. IC1104 receives the playback mode detection signal sensed by IC0201 (VIDEO DSP) and instructs IC0904 (CHARA. GEN.) to generate the display signals and also transfers the operation mode data to IC0201. Open for models with which only normal tapes are used.
91	-----	-----	----------	Not used. Open.
92	I	Lo	FAR-SW	Manual focus swatches (FOCUS-F/FOCUS-N) detection inputs.
93	I	Lo	NEAR-SW	
94	-----	-----	D.L.ON	DC light power control output. This outputs "Hi" according to the voltage input to pin 86 or 89, and drive Q0570 and Q0571 (LIGHT SW) to turn the DC light on.
95	-----	-----	----------	Not used. Open.
96	O	(Pulse)	CLK-CDS	Transfer data to IC0202 (CDS/AGC & A/D CONV.).
97	O	(Pulse)	SDO-CDS	
98	O	(Pulse)	CS-CDS	Activates data communications with IC0202 (CDS/AGC & A/D CONV.).
99	O	(Pulse)	CS-EE	Activates data communications with IC1105 (EEPROM).
100	O	(Pulse)	CS-SYS	Activates data communications with DV circuit board (IC1901 (DV SYSTEM CONTROL μP)).

2. 8mm System Control Microprocessor (IC0901)

Pin No.	I/O	Active Level	Abbreviation	Function
1	O	Lo	CH2. REC[Lo]	Not used. Open.
2	O	Lo	CH1. REC[Lo]	
3	O	(Pulse)	SW30[Lo]	Antiphase head switching pulse (SW30 or SW25) output.
4	O	(Pulse)	SW30(25)	Head switching pulse (SW30 or SW25) output.
5	I	Hi	TEST/NOR[Lo]	Test program start detection input. A test program is executed when "Hi" is input.
6	O	Hi	FMAG1	Not used. Open.
7	I	Hi	ADP DET	AC adapter connection detection input.
8	I	Hi/Lo	PRE V	Lithium battery attachment and voltage detection input. (Not attached or less than 2.5V: Hi, Attached: Lo)
9	I	Lo	EXT BATT	Battery attachment detection input.
10	I	0V-3V	M-SW2	Mechanism state (mode) switch position (mode) detection input.
11	I	0V-3V	M-SW1	
12	I	0V-3V	M-SW0	
13	I	Lo	CAM SW[Lo]	Power switch detection input. "Lo" is input during recording (CAMERA mode).
14	I	Lo	VCR SW[Lo]	Power switch detection input. "Lo" is input during playback (PLAY mode).
15	I	Lo	EJECT[Lo]	Eject switch detection input. When "Lo" is input, the camera/recorder performs the eject operation even when the power is turned off (standby release input).
16	I	Lo	STAGE[Lo]	Cassette holder open/close detection input. "Lo" is input when the cassette holder is closed.
17	I	Hi/Lo	ME/MP[Lo]	Input to discriminate the type of tape. Hi: ME (metal evaporated) tape, Lo: MP (metal particle) tape.
18	I	Lo	WAKE UP[Lo]	Standby release input. When the camera power is turned on, "Lo" is input to release the standby mode. IC0901 detects the inputs of each switch to start operation.
19	I	Lo	REC START[Lo]	Recording start/stop switch detection input.
20	I	Lo	PHOTO[Lo]	Photo switch detection input. "Lo" is input during photo mode.
21	O	Hi	CHARGE CONT	Controls IC0553 (5V REG) to generate autofocus and charge circuits power supply 5V
22	O	Hi	INIT CHG(EXT)	Charge mode control output. Outputs "Hi" when the voltage of the attached battery is 5.8V or less, to set the camera/recorder to the initial charge mode.
23	O	Hi	CHG LED(EXT)	Outputs "Hi" during charging to control Q0732 (CHG LED DRIVE) so that the CHARGE LED (LED0751) lights.
24	-----	-----	LCD. BL	Not used. Open.
25	O	Hi	MUTE	Audio muting output. Outputs "Hi" to mute sound.
26	O	Hi/Lo	CAM[Lo]/LINE	Not used. Open.
27	O	(Pulse)	END LED	End LED drive output. Outputs pulses of approx. 50Hz when power is turned on.
28	O	Hi	VCR. ON	Power control output. Outputs "Hi" when power is turned on.
29	O	Lo	OSD RESET [Lo]	Outputs "Lo" with power on and is set to open with power off to initialize IC0904 (CHARA. GEN.).
30	O	(Pulse)	CEVF-CS	Not used. Open.
31	O	Hi	C.STANDBY	Capstan motor power control output.
32	O	Lo	CAM RESET [Lo]	Outputs "Lo" with power on and is set to open with power off to initialize IC1104 (CAMERA μP).
33	O	Lo	Hi-8 ET	Not used. Open.
34	O	Lo	DSP RESET [Lo]	Outputs "Lo" with power on and is set to open with power off to initialize IC0201 (VIDEO DSP).
35	O	Hi	FMAG2	Not used. Open.
36	-----	-----	----------	
37	-----	-----	GND	Grounded.
38	I	Lo	SYSTEM RESET[Lo]	Microprocessor reset input. "Lo" input resets the microprocessor.
39	-----	-----	GND	Grounded.
40	O	(Pulse)	XTAL OUT 12MHz	Drive X0901 to generate 12MHz main clock pulses.
41	I	(Pulse)	EXTAL IN 12MHz	

Pin No.	I/O	Active Level	Abbreviation	Function
42	I	(Pulse)	CS-SYC(FR)	Activates data communications with DV circuit board (IC1901 (DV SYSTEM CONTROL µP)).
43	I	(Pulse)	C-S DATA(FR)	For data communications with DV circuit board (IC1901 (DV SYSTEM CONTROL µP)).
44	O	(Pulse)	S-C DATA(FR)	
45	I	(Pulse)	C LOCK(FR)	
46	I	0V-3V	OVER-C	Overcurrent detection input during charging. Changes the gain during charging to monitor the charge current.
47	I	0V-3V	VCR KEYS2	VCR operation switch detection input (PLAY, DATE, TITLE, MENU and AE).
48	I	0V-3V	CHARGE C	Charge current detection input. Monitors the charge current during charging.
49	I	0V-3V	BATTERY	Input to detect the battery remaining level.
50	-----	-----	GND	Grounded.
51	I	-----	AVref	Reference voltage input. Connect to 3V line.
52	-----	-----	AVdd	3V power input.
53	I	Hi/Lo	CASSETTE-SW	Erase prevention tab and Hi-8/Normal of the cassette detection input.
54	I	0V-3V	+B VDET	Battery voltage detection input. Monitors the attached battery voltage.
55	I	Lo	EXT MIC	External microphone connect detection input.
56	I	0V-3V	VCR KEYS1	VCR operation switch detection input (REW, F.FWD and STOP).
57	I	0V-3V	TRACK ADJ.	For the connection of a tracking control for adjustment. When an ATF-R jig is connected to PG0601 (test plug), the variable resistor on the ATF-R jig can be used as a tracking control.
58	I	(Pulse)	EST	Take-up tape end detection input.
59	I	(Pulse)	ESS	Supply tape end detection input.
60	I	(Pulse)	ENV DET	Playback (PB) FM signal input.
61	I	(Pulse)	RSS	Supply/take-up reel sensor inputs. Used to calculate the remaining tape and to detect reel lock.
62	I	(Pulse)	RST	
63	I	0V-3V	D8REV	Capstan forward/reverse control signal in the Digital 8 mode.
64	I	(Pulse)	C.SYNC	Composite sync signal input. The separated vertical sync signal is divided by two to generate the 1/2V.SYNC pulse which is used to control the cylinder speed during recording (reference signal).
65	I	(Pulse)	TBC CONT	Cylinder phase control signal input.
66	I	(Pulse)	DPG	Cylinder PG (CYL. PG) pulse input. Controls the cylinder speed during recording and playback.
67	I	(Pulse)	DFG	Cylinder FG (CYL. FG) pulse input. Controls the cylinder speed during recording and playback.
68	I	(Pulse)	CFG	Capstan FG (CAPST.FG) pulse input. Controls the capstan speed and used for counting of the linear time counter and recording restart control (assemble recording).
75	I	(Pulse)	CFG	
69	O	Hi	LOAD	Loading motor drive outputs.
70	O	Hi	UNLOAD	
71	O	Hi	CHARGE(EXT)	Charge circuit control output. Outputs "Hi" during charging to activate the charge circuit.
72	O	(Pulse)	OSD CS	Activates communications with IC0904 (CHARA. GEN.).
73	O	PWM	D.SPEED	Cylinder servo control outputs.
74	O	PWM	C.SPEED	Capstan servo control outputs.
76	I	Lo	V-DET[Lo]	Inputs whether a battery is attached or not. "Lo" is input when the battery is detached, to shift the microprocessor to the backup mode in which the data is saved.
77	I	Hi	DC900DET	Not used.
78	O	(Pulse)	D. OUT	For data communications with IC0904 (CHARA. GEN.).
79	O	(Pulse)	CLOCK	
80	O	Hi	T.FADE	Not used. Open
81	I	Hi/Lo	BATT. SERIAL	Battery serial time detection input.
82	-----	-----	BEEP	Not used.
83	I	(Pulse)	REMOCON	Remote operation signal input from the infrared receiver.
84	I	(Pulse)	32kHz TEX IN	Generate 32kHz sub-clock pulses.
85	O	(Pulse)	32kHz TX OUT	
86	-----	-----	GND	Grounded.
87	-----	-----	Vdd	3V power input.
88	-----	-----	----------	Not used. Connected to 3V line.
89	-----	-----	----------	Not used. Open
90	O	Hi	C.REVERSE	Capstan motor reversing control output.

Pin No.	I/O	Active Level	Abbreviation	Function
91	O	Hi	REC	Not used. Open.
92	O	Hi/Lo	PB	
93	O	Hi	D.STANDBY	Cylinder motor start auxiliary output. Outputs "Hi" for 50 ms when the motor is started in the forward rotation direction.
94	O	Lo	PR.CONT	Not used. Open.
95	O	(Pulse)	HD	Artificial H. sync signal output.
96	O	(Pulse)	ADDV+ SQUELCH	Artificial V. sync signal + video muting signal output.
97	O	Hi/Lo	WIPE CONT	Output to select the display mode (normal or 16×9 (wide vision)).
98	O	Hi/Lo	LCD-HOLD	Controls the LCD control circuit operation mode.
99	O	(Pulse)	AUDIO30(25)	Outputs switching pulses to IC0401 (8mm AUDIO PROCESS).
100	O	Hi	FE CONT	Not used. Open..

CHAPTER 7 APPENDIX

1. SELF-DIAGNOSTIC FUNCTION

1. 1 Overview

The camera/recorder has the following self-diagnostic function.

- Occasional defect self-diagnostic function (A mode)
- Mechanical block self-diagnostic function (B mode)

Fig. 1-1 shows the self-diagnostic coverage range.

The self-diagnostic functions of the camera/recorder are engaged by the 8mm system control μP (IC0901) which detects, memorizes and displays data related to defects in the mechanical block control system.

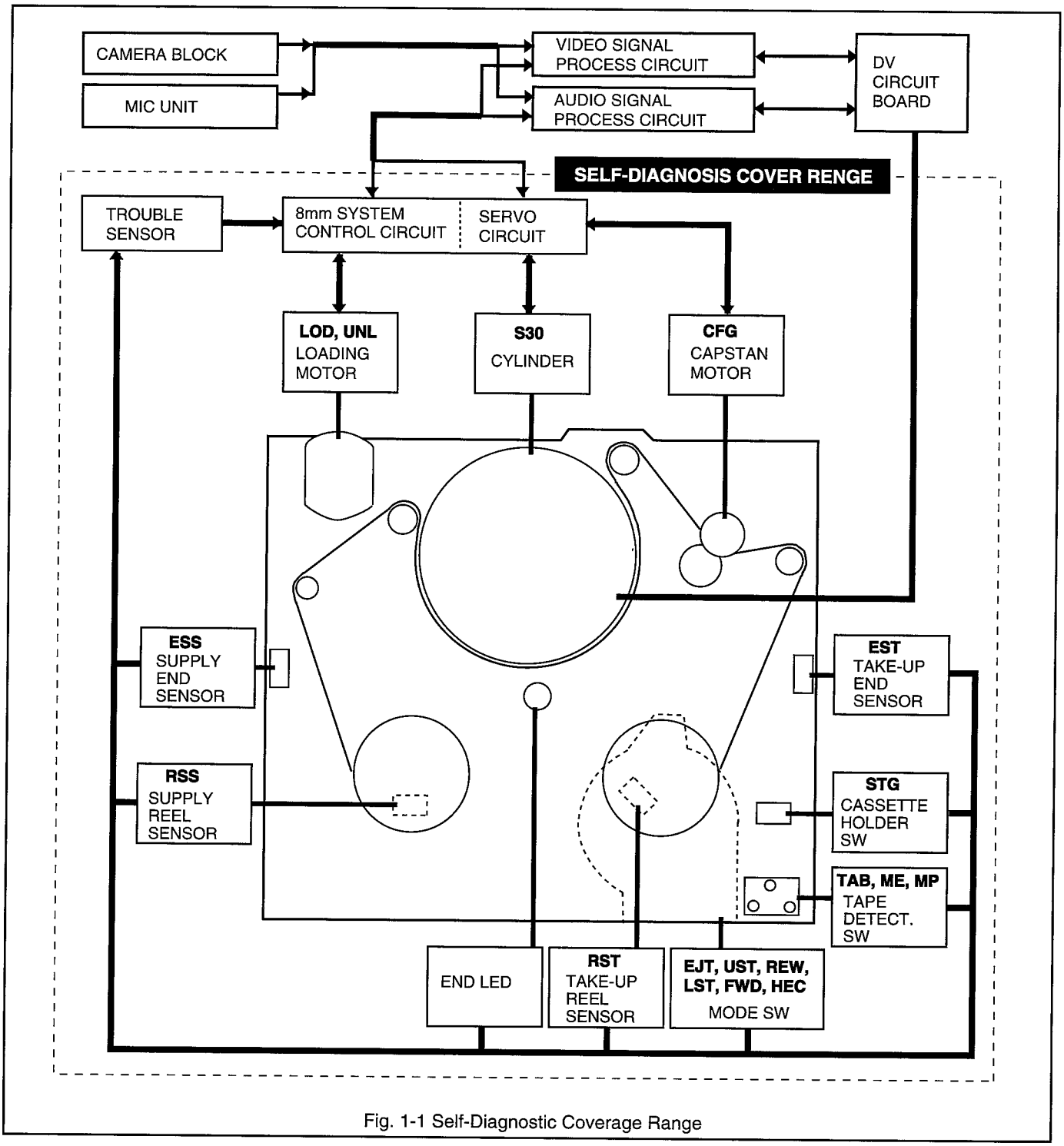


Fig. 1-1 Self-Diagnostic Coverage Range

1.2 Details of Display/Detection and Applications

Table 1-1 summarizes the details of display/detection of the self-diagnostic functions and their applications.
Fig. 1-2 shows the operational processes of the self-diagnostic functions.

Table 1-1 Details of Display/Detection of Self-Diagnostic Functions and their Applications

	Occasional defect self-diagnostic function (A mode)	**Mechanical block self-diagnostic function (B mode)**
Details of display/ detection	The 8mm system control μP memorizes and displays the defect data. (If several defects have occurred, only the last defect detected is memorized.)	Displays the data for the defect that has occurred when the B mode is set.
Application	Used when the defective symptom is not reproduced during servicing.	Used to detect the cause of the defect (in the mechanical block or electrical circuits) and to determine the defective position of the mechanical block.
Detected parts	Trouble sensors • Take-up end sensor (EST) • Supply end sensor (ESS) • Take-up reel sensor (RST) • Supply reel sensor (RSS) Cylinder (S30) Capstan motor (CFG)	Trouble sensors • Take-up end sensor (EST) • Supply end sensor (ESS) • Take-up reel sensor (RST) • Supply reel sensor (RSS) Cylinder (S30) Capstan motor (CFG) Loading motor (LOD, UNL) Mechanism mode switch (EJT, UST, REW, LST, FWD, HEC) Tape detection switches, etc. • Erase prevention tab detection switch (TAB) • ME/MP detection switch (ME) • Hi-8 MP detection switch (MP) • Cassette holder switch (STG)
Cautions	When the rewind mode is entered, the defect data is erased.	Engage the B mode after completing the A mode. If the B mode is engaged first, the defect data may be erased.

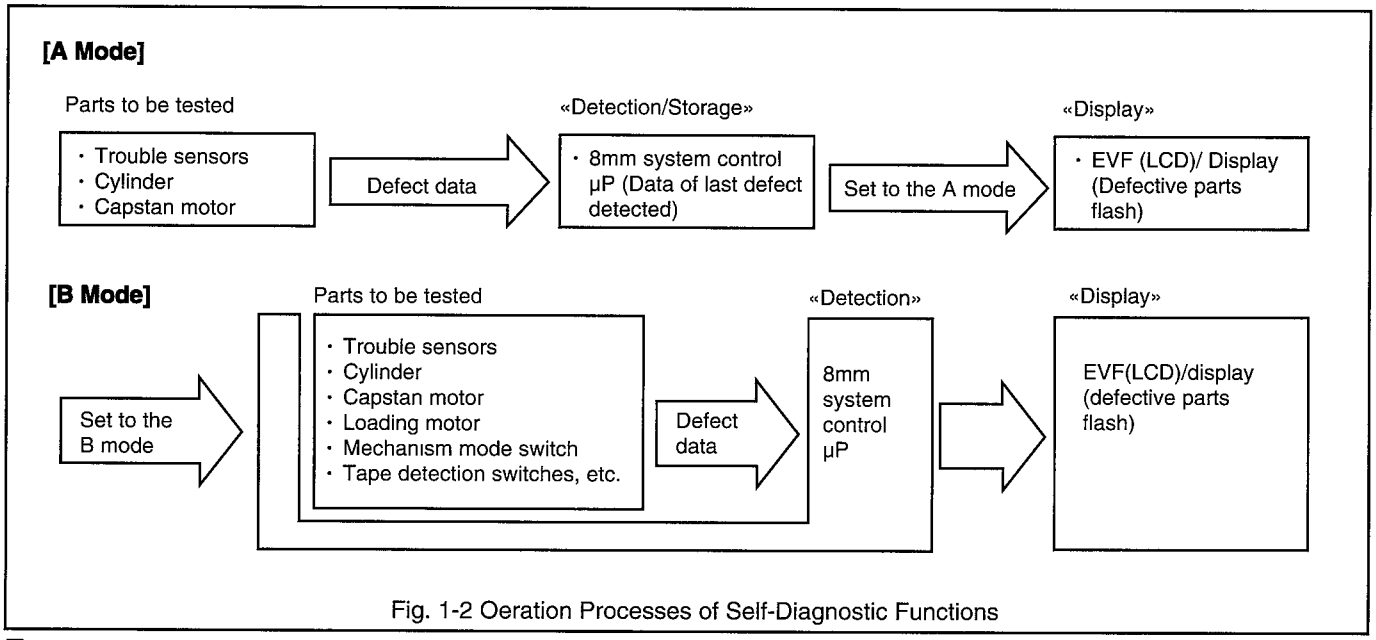


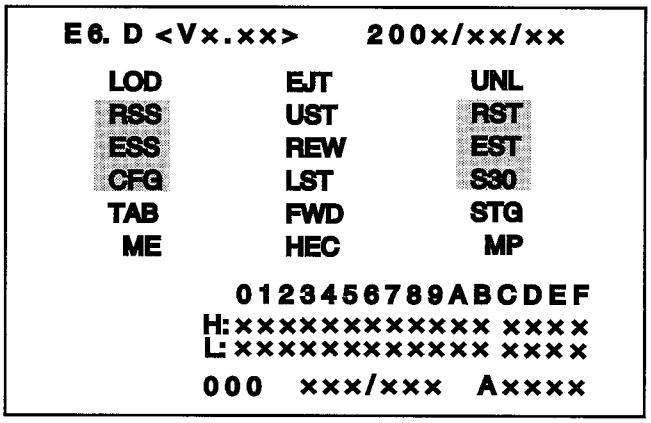
Fig. 1-2 Oeration Processes of Self-Diagnostic Functions

1.3 Setting Procedure and Details of Diagnosis

1.3.1 Occasional Defect Self-Diagnostic Function (A Mode)

(1) Setting Procedure

1) Connect (attach) a power supply (battery).
2) Set the CAM/OFF/VIDEO switch to"VIDEO".
3) Press the DATE button. [Within half a second]
4) Press the DATE and REW buttons simultaneously and hold them for 3-5 seconds.



< Results of self-diagnosis >

- The shaded items flash if they are defective.
- See Table 1-2 for the results of diagnosis.

Cautions:

- Do not press any buttons other than those specified during self-diagnosis; otherwise, it may cause a malfunction.
- Only the shaded items are tested in the A mode.
- Other items are ignored.

[To release]

- Set the CAM/OFF/VIDEO switch to "OFF".
- Press the DATE and REW buttons simultaneously.

(2) Results of Diagnosis

Table 1-2 summarizes the results of diagnosis and the circuits/parts deemed to be defective in the A mode.

Table 1-2 Details of A Mode Self-Diagnosis

Part	Display	Results of diagnosis	Parts/circuits deemed to be defective
Trouble sensors	RSS	The pulse from the supply reel sensor is defective.	Supply reel disk Trouble sensor (reel sensor) IC0901
	RST	The pulse from the take-up reel sensor is defective.	Take-up reel disk Trouble sensor (reel sensor) IC0901
	ESS	The pulse from the supply end sensor is defective.	Trouble sensors (end sensor/end LED) Q0905 IC0901 DC-DC converter circuit (B+ line)
	EST	The pulse from the take-up end sensor is defective.	Trouble sensors (end sensor/end LED) Q0905 IC0901 DC-DC converter circuit (B+ line)
Cylinder	S30	The SW30/25 (CYL. FG) pulse is defective.	Cylinder IC0631 IC0901 DC-DC converter circuit
Capstan	CFG	The CAPST. FG pulse is defective.	Capstan motor IC0651 IC0901 DC-DC converter circuit

1.3.2 Mechanical Block Self-Diagnostic Function (B Mode)

Caution: Complete the A mode before engaging the B mode.

(1) Setting Procedure

1) Connect (attach) a power supply (battery).
2) Press the EJECT switch to set to the eject state.
3) Press the "Hi-8 MP" switch on the trouble sensor and the DATE button and hold them, then set the CAM/OFF/VIDEO switch to "VIDEO" (Hold this state for a few seconds.) [Within 3 seconds].
4) Close the cassette lid.
5) The procedure ends in the eject state.

Note: Do not close the cassette lid.

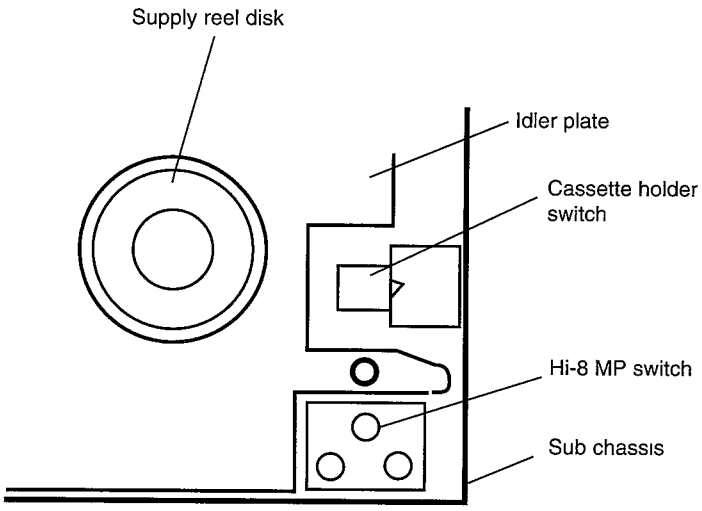
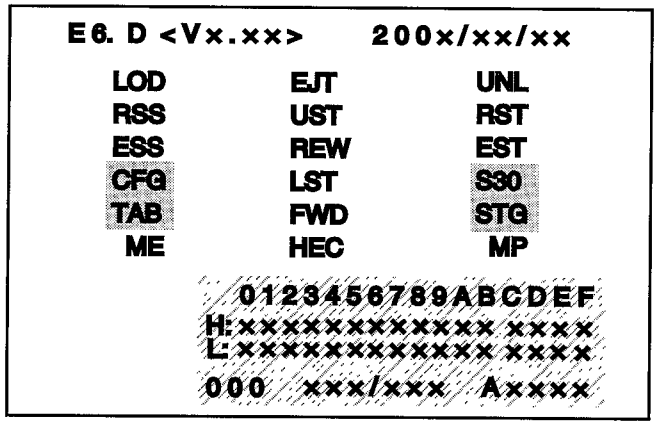


Fig.1-3 Hi-8 MP Switch Position



< Results of self-diagnosis >

- The defective items flash.
- The shaded items are the tape detection switches and cassette holder switch which flash when they are not pressed.
- See Table 1-3 for the results of diagnosis.

Cautions:

- Do not press any buttons other than those specified during self-diagnosis; otherwise, it may cause a malfunction.
- The indications in dotted lines are not covered by the self-diagnostic functions.
- It is normal for the diagnostic procedure to end in the eject state. Do not close the cassette lid thereafter.

[To release]

- Set the CAM/OFF/VIDEO switch to "OFF".

(2) Results of diagnosis

Table 1-3 summarizes the results of diagnosis and the circuits/parts deemed to be defective in the B mode.

Table 1-3 Results of B Mode Self-Diagnosis (1/2)

Part	Display	Results of diagnosis (Detect display conditions)	Parts/circuits deemed to be defective
Loading motor	LOD	The loading motor is defective when running forward. (Does not load within 10 seconds.)	Loading motor Rotation of drive gears in mechanical block faulty. IC0671 IC0901 IC0902 Power supply (5V, B+) lines.
	UNL	The loading motor is defective when running in reverse. (Does not unload within 10 seconds.)	
Trouble sensors	RSS	The pulse from the supply reel sensor is defective. (There is one pulse or less withinte two seconds.)	Supply reel disk Trouble sensor (reel sensor) Capstan motor IC0901
	RST	The pulse from the take-up reel sensor is defective. (There is one pulse or less within two seconds.)	Take-up reel disk Trouble sensor (reel sensor) Capstan motor IC0901
	ESS	The pulse from the supply end sensor is defective. (No pulse is input for more than 100 ms continuously within two seconds.)	Trouble sensors (end sensor/end LED) Q0905 IC0901 DC-DC converter circuit (B+ line)
	EST	The pulse from the take-up end sensor is defective. (No pulse is input for more than 100 ms continuously within two seconds.)	Trouble sensors (end sensor/end LED) Q0905 IC0901 DC-DC converter circuit (B+ line)
Tape detection switches, etc.	TAB	The erase prevention tab detection switch detects the record inhibit state (OFF).	**Caution**: These switches flash when they are not pressed. It is abnormal if they flash when pressed. Trouble sensor IC0901
	ME	The ME/MP tape detection switch detects the MP state (OFF).	
	MP	The Hi-8 MP tape detection switch detects the normal MP state (OFF).	
	STG	The cassette holder switch detects the state where the cassette holder is not lowered (OFF).	
Capstan motor	CFG	The CAPST. FG pulse is defective. (150 pulses or less within two seconds.)	Capstan motor IC0651 IC0901 DC-DC converter circuit
Cylinder	S30	The SW30/25 (CYL. FG) pulse is defective. (No pulse is input normally within two seconds.)	Cylinder IC0631 IC0901 DC-DC converter circuit
Mechanism mode switch	UST	The unloading stop position detection signal is defective.	**Caution**: The positions shown on the left are detected in the order described within 10 seconds. Mechanism mode switch
	REW	The rewind position detection signal is defective.	

Table 1-3 Results of B Mode Self-Diagnosis (1/2)

Part	Display	Results of diagnosis (Detect display conditions)	Parts/circuits deemed to be defective
Mechanism mode switch	LST	The loading stop position detection signal is defective.	Trouble sensor IC0901 Defective rotation/phase of drive gears in mechanical block. Loading motor. Tape transport components. Guide roller rails DC-DC converter circuit.
	FWD	The play or fast forward position detection signal is defective.	
	HEC	Between the fast forward position and unloading stop position detection signal isdefective.	
	EJT	The eject position detection signal is defective.	

Memo

2. DEMONSTRATION (DEMO) MODE

This camera/recorder is equipped with a demonstration mode in which the incorporated functions are automatically switched and displayed.

Caution: The camera/recorder does not accept functions (operations) other than those shown below:
- EJECT
- Setting CAM/OFF/VIDEO switch to "OFF"

2.1 Setting the Demo Mode

Attach a power supply (battery) and choose one of the following procedures:

1) When "DEMO AUTO" is specified using menu, leave the camera/recorder for approx. 10 minutes with all the following conditions satisfied:
   - Date not set
   - Cassette tape not inserted
   - In the camera recording mode
2) When "DEMO AUTO" is specified using the menu, set the CAM/OFF/VIDEO switch from "OFF" to "CAM" while holding down the "PLAY" button, with all the following conditions satisfied:
   - Cassette tape not inserted
   - PHOTO/STANDBY/LOCK (STANDBY/LOCK) switch set to "STANDBY"
3) Specify "DEMO START" using the menu with a cassette not inserted, and then release the menu.

Note: "DEMO START" cannot be specified when a cassette is in the camera/recorder.

2.2 Exiting the Demo Mode

Perform one of the following procedures to exit the demo mode:

1) CAM/OFF/VIDEO switch to "OFF" or remove the power supply.
2) Load a cassette.

2.3 Contents of Demonstration

The following table shows the examples of display/operation contents in the demo mode:
The display/operation in the demo mode will vary, depending on the model (equipped functions provided or not).

No.	Item	Display content, example of display	Display time	Remarks
1	Start of demo	All display off.	For approx. 4 s	
2	Display of model name		----------	
3	WELCOME display	WELCOME TO HITACHI DIGITAL DEMONSTRATION	----------	
4	DIGITAL 8 display	DIGITAL 8	----------	
5	Introduction of functions	HQ D.ZOOM/5-MODE EFFECTS/ 7-COLOR TITLES/5-MODE AE/6-MODE FADER/DIGITAL TBC/EIS/2.5" LCD/ PHOTO MODE		Varies, depending on the model.
6	EIS simulation	EIS OFF: Electronic zoom operation, vertical picture shaking is considerable. EIS ON: Electronic zoom operation, vertical picture shaking is negligible. EIS OFF: Electronic zoom operation, horizontal picture shaking is considerable. EIS ON: Electronic zoom operation, horizontal picture shaking is negligible.	For approx. 3 s For approx. 3 s For approx. 3 s For approx. 3 s	Only for models with EIS function.

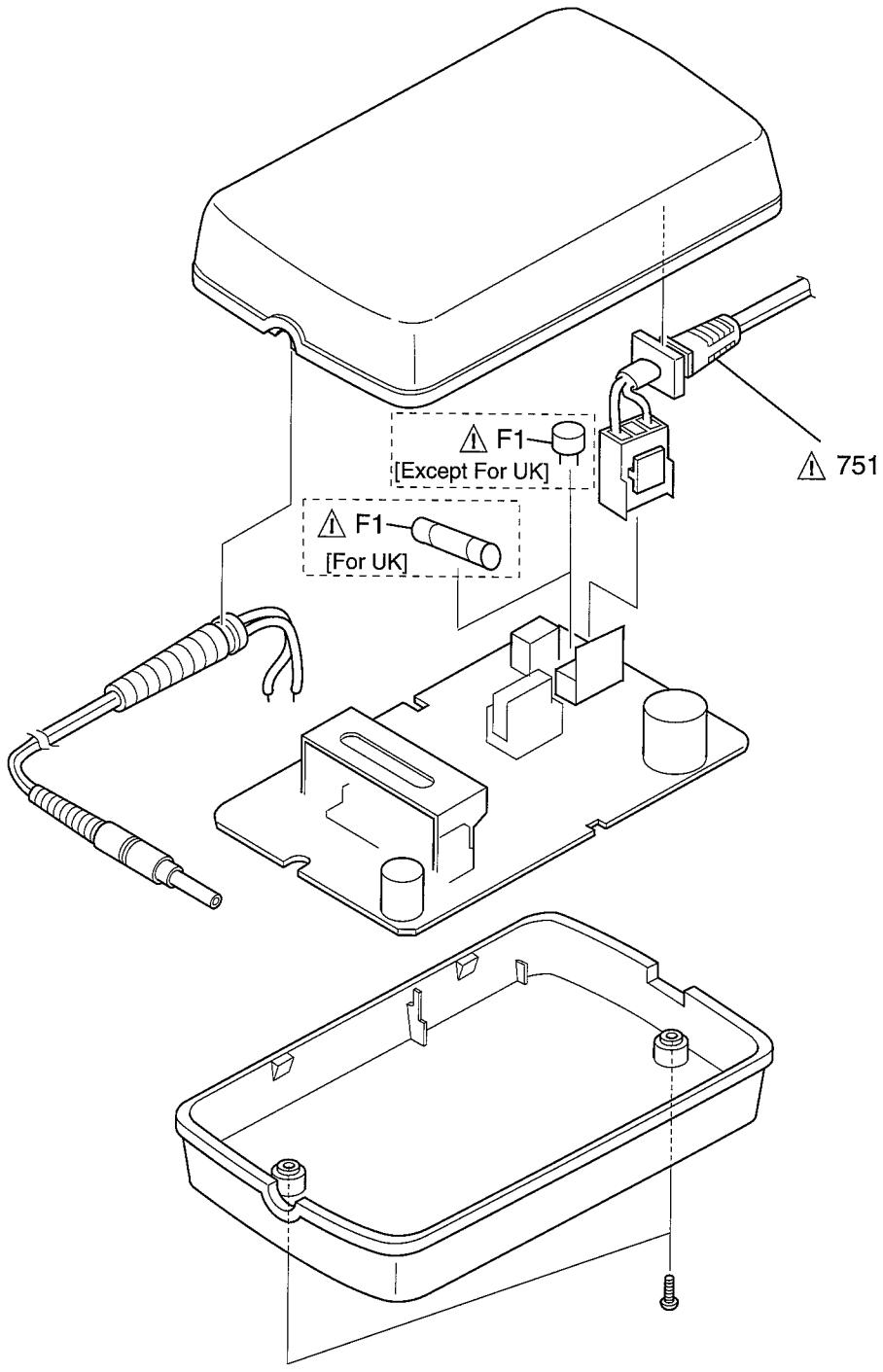
No.	Item	Display content, example of display	Display time	Remarks
7	HQ DIGITAL ZOOM demonstration	Rapidly changing from wide to tele in digital zoom area. Rapidly changing from tele to wide in digital zoom area.	For approx. 3 s For approx. 3 s	Performed twice.
8	6-MODE FADE demonstration	White Fade: In - Stop - Out Wipe Fade: In - Stop - Out Mosaic Fade: In - Stop - Out Art Fade: In - Stop - Out Zoom Fade: In - Stop - Out Black & White Fade: In - Stop - out	----------	Each stop time is for approx. 1 s.
9	5-MODE EFFECTS demonstration	16 × 9 picture Negative picture Half -mirror picture Mosaic picture Art picture	For approx. 3 s each	
10	User registered title demonstration	TITLE DEMO	----------	
11	7-COLOR TITLES demonstration	Preset titles appear in sequence. The display is returned to the first title, and then its color is changed.	For approx. 1 s each For approx. 1 s each	Colors change from white to yellow, cyan, magenta, red, green, and back to white in sequence.
12	Returning to 1.			

Memo

CHAPTER 8 AC ADAPTER

VM-ACE5E/ACE5E(AU)/ACE5E(UK)

SYMBOL-NO	P-NO	DESCRIPTION
⚠ 751	EV10681	CORD, AC [Except for (UK), (AU)]
⚠ 751	EV10701	CORD, AC [For (UK)]
⚠ 751	EV10711	CORD, AC [For (AU)]
⚠ F1	FN10261R	FUSE [Except for (UK)]
⚠ F1	5722801	FUSE [For (UK)]



HITACHI

VM-D965LE/D965LE(AU)
VM-D865LE/D865LE(AU)
VM-D865LE(UK) VM-ACE5E
TK No.7004E Digital Media Products Division,Tokai

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